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**THE ZOOLOGIST:**

A

**POPULAR MONTHLY MAGAZINE**

OF

**NATURAL HISTORY,**

AND

**JOURNAL FOR RECORDING FACTS AND ANECDOTES**

RELATING TO

QUADRUPEDS, BIRDS, REPTILES, FISHES, MOLLUSKS,  
INSECTS, WORMS, ZOOPHYTES, &c.

THEIR HABITS, FOOD, RETREATS, OCCASIONAL APPEARANCE,  
MIGRATIONS, NESTS AND YOUNG.

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## Zoological Miscellany.

*Antiquity of Man.*—It appears to me that the following information has some bearing upon the evidence of human fossil bones. About twelve years since some human bones were taken from a fissure in a quarry, worked, I believe, for hæmatic ore, in the mountain limestone at the Mumbles, Swansea. Of these bones I have one which is a portion of a lower jaw. It consists of the right ramus only, and contains the three molar teeth, the first and second being considerably more worn than the third. In an ethnological point of view there is one feature of interest, the third molar is larger than the second, and the second is larger than the first; but this increase is to a certain extent made greater than real, in consequence of the first and second being considerably more worn down by mastication than the third. The increase of the size of the teeth posteriorly is characteristic of the New Zealand type, and is the converse of the European normal condition. But the chief object to which I wish to draw attention in this specimen is that it bears all the appearances of great antiquity. The animal substance is so far removed that the bone will hang to the lip. This, to a less extent, is the case with the teeth also. Being desirous of ascertaining the amount of animal matter still remaining, I placed a fragment of the bone in some hydrochloric acid, and found that there was not the slightest trace of gelatine left in the residue. I also sawed into two pieces one of the teeth. The freshly-cut surface is white and compact, but more opaque than in a recent tooth. I immersed one half in hydrochloric acid, and found that after all the lime had been removed the gelatine remained to a very large extent, showing that but a small portion had yet been extracted. Here, then, we have an instance in which the gelatine is removed from the bone and not from the teeth in the same jaw, therefore demonstrating how much more rapidly the animal substance is removed from one tissue than from another. I have also a jaw of a child about eight or nine years of age, taken, I understand, from the same fissure as the preceding specimen. This appears not to have lost any sensible portion of animal material, and offers little or no peculiarity to distinguish it from any graveyard bone. I have seen the tooth of the hippopotamus, from a limestone cave at Plymouth, so perfect in its histological conditions that it appeared fit for the turner; and I remember some bat's bones that I removed from beneath a thick stalagmitic crust, in Bacon Hole Cave, so perfect that they might readily be mistaken for recent specimens, while all the other bones from the same cave were extremely friable from the loss of the gelatine. I do not bring forward these specimens as evidence of fossil man, but only to show that bones may lose every atom of gelatine, and yet the teeth possess the appearance of being recent, while lying under one and the same condition; and, moreover, that bones may, under apparently the same conditions, be differently acted upon, and therefore exhibit different results. I say that I do not offer the specimens as evidence of antiquity. My reason is, that one of the specimens from which the teeth are lost, or another that I have mislaid altogether, exhibited marks on the teeth, similar to those we see in the mouths of persons by whom a clay pipe has been much used. This suggests the idea that the bones must have been interred subsequently to the introduction of tobacco into this country, unless we are prepared to show that "antique man" smoked a "calumet,"—a not improbable circumstance when we remember the common practice of savage life, and from whom we receive the modern luxury. If these remarks have any value, they must press against the assertion that because the tooth found at Abbeville contained gelatine therefore it could not be so old as bones that have lost their gelatine, even if found under similar conditions. There is one circumstance that must strike the least accurate observer, that in these specimens, spurious or antique, it is curious how they differ from the present type of Europeans.—*C. Spence Bate*; 8, *Mulgrave Place, Plymouth.*—*'Athenæum.'*

*Drumming of Fishes.*—In noticing the circumstances under which these fishes have acquired the name of grunters or croakers—crocos and cricris—and drummers among the Corvinas, we shall quote Baron Humboldt's account of his first experience with their musical noises. "Towards seven in the evening," he says, "while in the South Sea, on the 20th of February, 1803, the whole crew were astounded by an extraordinary noise, which resembled that of drums beating in the air. It was at first attributed to the breakers. Speedily it was heard within the vessel, and especially towards the poop. It was like a boiling, in other words, like the noise of air escaping from a fluid in a state of ebullition. They began to fear that some leak might be in the vessel. It was unceasingly heard in all parts of the ship; and, finally, about nine o'clock it ceased altogether." Humboldt was not able to explain the causes of these

*Notes on Vespidae in 1861.* By STEPHEN STONE, Esq., F.S.A.

ALTHOUGH, from the observations I was enabled to make during the summer of 1860, I was led to conclude that there was not in reality so great a scarcity of social Vespidae as there appeared to be, I by no means expected to meet with queen wasps the following spring in such immense numbers as, when that season arrived, were observed upon the wing.

Being anxious to have an opportunity of extending my observations upon the fertility of the workers, and of making the acquaintance of the larvæ of *Ripiphorus paradoxus*, as well as of ascertaining the real nature of the objects with which I have repeatedly found the nests of wasps to be studded, particularly about the crown, and which I had always thought must be the eggs of some parasitic insect, but which, on being exhibited at a meeting of the Entomological Society of London, were pronounced to be minute pupa cases, it was with more than usual interest I looked forward to the time the insects should begin building.

Before the end of May I discovered several nests, in some of which young wasps had been produced, thus showing that the insects had commenced their labours at an early period.

The first I took was a small one of *Vespa rufa*. It was removed early in June. The queen was taken with it, in the hope that when placed in a favourable situation she might be induced to continue the work; she, however, embraced the first opportunity of deserting that presented itself.

On the 10th of July I took out one of *V. germanica*, which I placed in the window of a room in an unoccupied house, where the work was resumed.

On the following evening I took out another of the same species, which was also removed to a room in the house above mentioned, in order that the insects might there continue the work, which they accordingly did. When this nest was removed from its original situation under ground a number of the workers were intentionally left behind: two small pieces of comb from a nest of *V. vulgaris*, obtained two years before, were suspended by a wire in the cavity, as the nucleus of a future nest, in case the insects should feel disposed to construct one, which, from the experience I had had in former years, I fully expected would have been the case; nor was I disappointed, for a few

days afterwards they were observed to be busily at work, when some boys amused themselves by turning up the sods and laying the nest bare: in this situation it remained two days and nights, exposed during a great part of the time to a drenching rain. On finding out what had occurred I replaced the sods, when the work again went on, but on visiting the spot on the 27th, I found that a mole had worked its way through the cavity in which the nest was situate, laying the latter completely in ruins: this proved to be the finishing stroke. All the wasps had either been destroyed or they had abandoned the place, except one, and that one was full of eggs, while all the cells contained either eggs or small larvæ.

On the 12th I took out a nest of *V. vulgaris*, and on the 13th another of that species; both were thoroughly examined, in the hope of finding larvæ of *Ripiphorus*, but no trace of the parasite could be discovered.

On the 15th I took a small nest of *Vespa germanica*, and on the 16th one of *V. vulgaris*; the latter was suspended from the thatch inside the roof of a cow-shed. The combs belonging to both nests were placed, after the covering had been removed, in situations in which the work could be resumed.

On the 17th I took out two nests of *V. vulgaris*; they were situated almost close together, under ground. Search was made in both for larvæ of *Ripiphorus*, but none could be discovered.

On the 20th another nest of *V. vulgaris* was obtained from under ground, and on the 23rd one of the same species was removed from the thatch of a cottage, in neither of which could larvæ of *Ripiphorus* be found.

On the 24th I took out a small nest of *V. germanica*; the queen wasp appeared to have perished some time previously. The combs, three in number, were barely three inches in diameter, one of the three not exceeding an inch: there were but about twenty workers belonging to the nest, the colony having evidently much decreased in number of late; twelve males had become developed, and by far the greater number of the cells appeared to contain males in an undeveloped state, but few containing larvæ or pupæ of workers. In no other instance have I met with males of this species till a far later period in the season.

On the 26th I took a nest of *V. vulgaris*, which was suspended from a rafter inside the roof of a forcing-house. No trace of *Ripiphorus* could be discovered in it.

Between the above date and the 1st of August I took out three



nests of *V. vulgaris*, in neither of which could traces of *Ripiphorus* be found. One contained three or four cocoons spun by larvæ of *Anomalon Vesparum*, from which the perfect insects emerged on the 19th.

On the 2nd of August I took out a large nest of *V. germanica*, which appeared to have been deprived of the queen some time before.

On the 3rd I took out a nest of *V. vulgaris*, which also appeared to have been deprived of the queen some time previously.

On the 5th I took another nest of *V. vulgaris*, which was destitute of a queen. The combs were found to be in a mouldy condition, and the nest appeared to be going rapidly to decay.

On the 6th a nest of *V. vulgaris* was obtained from inside the head of a felled willow; mouldiness had spread itself over the combs, which did not contain a single spun-up larva or pupa, and the workers appeared to have very much decreased in number of late.

On the 7th I took out a nest of *V. sylvestris*; it was situated in the side of a ditch, beyond the bank of which it projected, so that a great part of it was exposed to view as well as to the weather. A vast number, both of males and young queens, had become matured, and the labours of the colony were, in fact, about to cease, the work of the nest having been nearly completed. I am not aware that it has been observed by writers upon Natural History that colonies of this species, as well as of *V. rufa* and *V. norvegica*, bring their labours to a close full two months earlier than either *V. germanica*, *V. vulgaris* or *V. Crabro*, yet such I have invariably found to be the case, as it may also probably be with *V. arborea*, a species with whose habits I am unacquainted, never having met with a nest or with a living example of the perfect insect.

On the 8th I took out a large nest of *V. vulgaris*, and on the 13th another of *V. sylvestris*. The latter was situated in a rabbit-burrow. I had known of this nest, and had been watching the progress of the work for some time. All seemed to be going on well till towards the end of July, when I observed that the crown was covered with what I took to be spiders' webs, which gradually extended themselves over the entire nest, increasing in density, while the wasps composing the colony daily decreased in number, till, at the time I took the nest out, few were left. On removing it, it was found to have been entirely destroyed by larvæ of *Ilythia sociella*, which had reduced it to a tough, firm, compact mass, somewhat resembling a huge spider's nest. In the 'Proceedings of the Entomological Society of London,' as

reported in the 'Zoologist' (Zool. 7807), Professor Westwood is said to have remarked that I had detected the larvæ of *Ilythia sociella* in the nest of a *Bombus*. This is incorrect: it was the above-mentioned nest of *Vespa sylvestris* to which I drew the Professor's attention as containing lepidopterous larvæ, when he obligingly pointed out to me the name of the species. The larvæ of this insect are generally represented as feeding on the wax or honey contained in the nests of humble bees: such may possibly be their general habit, but the present instance shows that there is an occasional departure from it, and as wasps' nests do not contain either wax or honey it is clear the larvæ in question do not entirely depend upon a supply of those articles for support, but that they can subsist upon other substances, the larvæ and pupæ of the wasps contained in the nest above described having apparently formed the diet of the brood which had become domiciled in it.

The same evening I took out a nest of *V. vulgaris*, the combs in which were in a deplorably mouldy condition: a number of full-grown larvæ of apparently a large dipterous insect were found in it. It contained but few living wasp larvæ. This had been a very populous nest, but the same fatality had lately attended it that had attended all those of this species I had recently examined, and although, after having been carefully searched for larvæ of *Ripiphorus*, each nest was, with the insects belonging to it, placed in a suitable position for further work, and the workers belonging to each colony were liberally supplied with sugar, but little work was done, the insects in each case gradually becoming fewer in number till all had disappeared, while, under similar circumstances, and with the same kind of treatment, the colonies of *Vespa germanica* I had established increased rapidly in size and strength.

I also the same evening took out a nest of *V. germanica*, the crown of which was studded with small pearl-like objects identical with those alluded to at the commencement of this paper as having been pronounced at a meeting of the Entomological Society to be minute pupa-cases. They were of three distinct kinds, one much larger than the other two. By far the greater number were empty, but from several of the larger, and from a few of one of the smaller kinds, I obtained larvæ. On showing the larger objects, with the larvæ produced from them, to Professor Westwood, that gentleman at once identified them as the eggs of a *Volucella*.

On the 15th I took out a small nest of *V. germanica*, which appeared not to have increased in size or the colony in number for some weeks

past: a band of marauders in the shape of woodlice, had been allowed to penetrate the covering and domicile themselves in different parts, notwithstanding that the queen and working wasps appeared to be healthy and tolerably active.

On the 16th I took out a nest of *V. germanica*, the crown of which was covered with eggs of the same description as those observed on that procured on the 13th.

On the 17th I took out another nest of *V. germanica*, on which numbers of eggs similar to those above mentioned had been deposited. After divesting this nest of its covering, the combs with the colony were placed in a glazed box and removed to the window of a room in the house in which I reside, liberty being given to the insects to pass in and out through an opening in the window. They were not supplied with sugar, lest it should attract too great a crowd from other quarters, the consequence of which was that they, one and all, positively declined to have anything to do with nest-building, larva-feeding or any other kind of work, but remained crowded together day after day between the combs, or crawled listlessly about the box. Things went on in this way till the 25th, when, finding that both the larvæ and the perfect insects were rapidly approaching a state of starvation, I put two or three table-spoonfuls of sugar into the box: the effect it produced was almost incredible; in a moment, as if by magic, every wasp was transformed from a listless, inanimate object, into a being of animation, activity and energy: work was at once resolutely set about, and before the evening of the next day the combs were completely enclosed. On the 28th the nest had become so beautiful a specimen that I determined on preserving it in the state it then was; I therefore summarily ejected the inmates, took it away, and in its room supplied them with combs of the same number and about the same size from a nest I took on the 24th. Around these combs they immediately proceeded to construct a covering, which, in the course of three days, they worked up to as great a degree of perfection as the former one, the two specimens being almost exactly alike.

On the 19th I took out another nest of *V. germanica*, on which were groups of eggs of the same kinds as those previously noticed. The covering was removed, the combs separated, and the whole of the insects left behind. The combs were then strung on a wire and suspended in the window of a room near a nest I had had at work since the 11th of July, when numbers of workers from the latter attached themselves to the newly-placed combs, feeding the larvæ they

contained, and setting about the construction of a fresh covering. Being placed a little in advance of the other nest, or somewhat nearer the entrance through the window, the greater part of the workers on coming in, entered it and deposited their respective burdens, instead of continuing their march to the further one, the consequence of which was that it soon became far the more populous of the two, the work being carried on with great rapidity.

On the 23rd I took out a nest of *V. vulgaris* that had been going to decay for some time past; it did not contain a single pupa or spun-up larva, and but very few of any age, with scarcely an egg, though the queen was still attached to it and appeared to be healthy enough.

On the 24th I took out a nest of *V. germanica*, separating the combs and leaving the insects behind. To these combs, as already stated, another colony was introduced on the 28th.

On the 29th I took out another nest of *V. germanica*; it contained six combs, which were separated and all the wasps removed. Four of the combs were strung on a wire, while the other two were divided into eight parts: the pieces were strung upon four wires, two upon a wire, and the whole number suspended in front of the nest obtained on the 10th of July, which had now attained to a large size; from this nest a number of workers proceeded to fabricate a covering for each set of the combs above mentioned, and to feed the larvæ they severally contained.

On the 18th of September I took a small nest of *V. Crabro* that had gone to decay: the queen was found dead in it, and with the exception of one larva, about half-grown, the cells in the single comb it contained were empty. About thirty workers had apparently been produced, but not one, either dead or alive, was to be found. I had known of the nest for some weeks, and had observed a gradual falling off in the number of the workers, instead of an increase, so that it was obvious there was something amiss in the affairs of the colony. The nest was situated in the hollow trunk of a service-tree about ten feet from the ground, and was within a few yards of the spot in which the one I obtained the year before was situate. With reference to that nest I may remark that of all the young queens which left it in the autumn, numbering, I believe, upwards of two hundred, not one was seen upon wing the following spring; a single one was found by some workmen in grubbing up a tree in the depth of winter, which was lying in a torpid state under the roots, and this was the only example I could hear of as having been met with. I captured three when about to leave the nest, and detained them during the winter, keeping



them in a box in a cold situation. One of the three died at the commencement of spring, and about the middle of May I turned out the other two, which had by that time become remarkably lively, active and restless. One was released at the very place in which the nest above alluded to was afterwards found, while the other was taken some distance in the opposite direction, at which spot, towards the close of summer, a few workers were observed for a time, so that a nest must unquestionably have been formed there also, and there can be little doubt but that in both instances my released prisoners were the architects, which, having been captured before leaving the nest, could not have become impregnated: whether from that cause they were unable to go beyond a certain point in establishing a colony is a question which further observation or renewed experiment may perhaps in time solve.

On the 19th I took out a nest of *V. germanica*, which contained full-fed larvæ of a *Volucella*, and nearly full-grown ones of a smaller description of fly, the produce of two out of the three kinds of eggs to which allusion has repeatedly been made. Numbers of young queen wasps had been produced in this nest.

On the 23rd I took out one of *V. germanica* of small size; males had become developed, but no young queens; indeed, only a few cells for the reception of the latter had as yet been commenced, and none of these were more than half completed.

On the 2nd of November I took out a small nest of *V. germanica*. Though so late in the season, and although the day was a cold one, the workers, a considerable number of which were still attached to it, defended it most determinedly, making what use they could of their stings, but the poison contained in these, their weapons of defence, had evidently lost much of its power, for the amount of pain it caused was comparatively insignificant.

I must now revert to the six sets of combs strung together on the 19th and 20th of August respectively, and suspended, the one near a nest procured on the 11th of July, the remaining five near one obtained on the 10th of that month. These combs consisted, at the time they were put together, entirely of the cells of workers, and none but workers gained access to them. They were quickly, as already stated, covered in, and the nests increased so rapidly in size, from the large number of workers which attached themselves to them, that the largest measured upwards of fourteen inches in diameter by the middle of October, prior to which date numbers of males had for some time been making their appearance, and when a portion of the covering

was removed, so as to allow of an inspection of the interior, it was found that one comb, consisting of the cells of workers, had been constructed since the 19th of August, the day on which the original combs were strung together, in which a number of workers had become developed, and two consisting of the cells of males, from which males in abundance had been produced. In each of the other nests one or two combs, consisting of male cells, were found to have been formed, from all of which males were obtained, so that the question as regards the production of male wasps, as well as workers, from eggs deposited by workers, may be said to be fairly set at rest.

Then comes the question, whether, had the season not been so near its close, these fertile workers, after having deposited a certain number of male-producing eggs, would not have set about building cells of females or queens, and deposited therein female-producing eggs, or eggs which should produce queens? Facts may, perchance, at some future time be obtained, tending to show that beyond all question such would have been the case.

One would have thought that the opinion expressed in the 'Entomologist's Annual' for 1861, by one of the first Hymenopterists of the day, Mr. F. Smith, "that we are at present only on the threshold of the way leading to the discovery of the history of the Vespidae," an opinion in which I fully concur, would have caused numbers of entomologists to turn their attention to the subject, with the view of endeavouring to dissipate, to some extent, the darkness and obscurity in which a portion of the history of wasps is at present shrouded. Such, however, does not appear to have been the case.

S. STONE.

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*Notes on Sea Anemones, Observations on the Tank, &c.* — It may be interesting to aquarists to know that young anemones, born in the tank, may be preserved with much greater facility than when they are kept with those of larger growth, by transferring them to a separate vessel. A finger-bason makes an admirable extempore aquarium for the purpose, which should have a handful or two of shingle at the bottom, and the water be changed occasionally: the latter is indispensable. By this means the little ones obtain more of their natural food, and when fed artificially the process is easier, and none are neglected. Several rare and beautiful specimens treated in this manner have amply repaid me for a little extra trouble. The colour of choice species (*rosea*, *miniata*, *Troglodytes*, &c.), usually deteriorated by light, may be retained in its beauty for a lengthened period by placing a small bell-glass over the specimens. This glass should be of a dark sea-green colour, four inches high and about five in diameter. Some five or six small holes should be drilled round

the button at top, to permit of free circulation of water. It may rest on a bit of stone or rock-work, on one edge, to the height of an inch, opposite the light; and it should be withdrawn when the specimens are required to be seen. The vessel, when not otherwise needed, is very useful for aerating the water. It may be filled and held over the tank for a few minutes, as opportunity presents during the day, or it may be permanently fixed in a little wooden framework (as I have seen it done by a friend) a foot or so above the aquarium. The gentle trickling stream, similar to that from the rose of a watering-pot, seems to be vastly more agreeable to my living flowers than the more violent process of syringing, if we may judge from the free and healthy manner in which they expand after the operation. — I have several times been asked by friends the best means of ridding the glass sides of tanks and vases from confervoid growth,—that difficult and troublesome, though highly necessary, inhabitant of all aquaria. When not excessive, of course it contributes materially to the health of the animals; but, so far as my experience goes, even with the best and most approved tanks it is sometimes an intruder, if not very carefully watched. Sponge-sticks and brushes have all been unavailing in cleansing the sides, so closely does it adhere. The following simple and inexpensive plan answers admirably: — Procure a piece of hard wood, say ten inches long, strong enough to bear pressure. Get it shaped into a wedge-like form, with a cylindrical handle coming out from the central part. A gardener's spade is the best model I can think of to go upon. Twist some coarse cotton, such as that used for the wick of a spirit-lamp, tightly round the wedge. This little instrument will be found most effective, when smartly rubbed on the glass sides of the tank, in removing all opacity. Large masses of *Conferva* may readily be picked off the rock-work with the forceps; and it is a good plan to give the anemones these pieces as food before removing them from the tank. They are greedily seized by the tentacles, retained for some time in the stomach, and afterwards disgorged. On examination of the smallest portion of a fresh piece under the microscope it will be found to contain myriads of Infusoria, Rotifera, Entomostraca, &c., the natural food of the Actiniæ, which I suppose will account for the relish with which the *Conferva* is retained. — A magnificent *Dianthus* in my possession really deserves to be immortalised in the pages of the 'Zoologist.' It is by far the finest specimen I have ever seen or heard of. I suppose that eminent authority Mr. Gosse would assign it to the var. *brunnea*. The colour is of a beautiful pale orange, with the lip of a brilliant and darker tinge. The creature is comfortably located on the convex side of an immense oyster-shell, but has on one or two occasions endeavoured to change its quarters, to the detriment of sundry individuals of other species. As far as I can measure with accuracy, it is full 7 inches high, 4 in diameter across the disk and tentacles, and about 1½ inch in diameter of column. The base covers an irregular outline of 8 inches in circumference. When closed it is the most insignificant creature one can conceive; but when fully expanded and perfectly erect it is a truly beautiful and graceful object. Seven lobes, bristled and frilled and indented with tentacles which baffle my perseverance to count, festoon around the summit of the column, and give it the appearance of a noble palm tree. This appearance is increased if we may fancy the undulating motion of the tentacles (which are a rarity to see perfectly at rest) to resemble the gentle breeze when playing through the leaves of a palm tree. The specimen was dredged from the middle of Weymouth Bay, in the month of September last, by a friend, who presented it to me. Since then it has produced some twenty young ones, by fission of small portions of the base. At one time eight of these, each less than an

inch in height, surrounded their noble parent, whose erect example they appeared to be desirous of emulating in a most amusing manner. So many friends have admired my pet that I crave this as an apology for this description, though the animal must be seen to be appreciated. — *W. R. Hughes ; The General Hospital, Birmingham, May 23, 1863.*

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### *Proceedings of Societies.*

#### ENTOMOLOGICAL SOCIETY.

June 1, 1863.—FREDERICK SMITH, Esq., President in the chair.

#### *Donations.*

The following donations were announced, and thanks voted to the respective donors: —‘The Transactions of the Entomological Society of New South Wales,’ Vol. i. Part I; presented by the Society. ‘Journal of the Proceedings of the Linnean Society,’ Vol. vii. No. 26; by the Society. ‘The Intellectual Observer,’ No. xvii.; by the publishers. ‘The Zoologist’ for June; by the Editor. ‘The Journal of the Society of Arts’ for May; by the Society. ‘The Reader’ for May; by the Editor. ‘Stettiner Entomologische Zeitung,’ Vol. 24, Nos. 4—6; by the Entomological Society of Stettin.

#### *Election of Member.*

A certificate in favour of Alfred R. Wallace, Esq., as a Member of the Society was read. On the proposition of Mr. Dunning, seconded by Mr. Stainton, it was unanimously resolved that, as a slight recognition of the vast services rendered to Science by this distinguished entomologist, zoologist and traveller (and following the precedents afforded by the election of Mrs. F. W. Hope, and that of Mr. Tweedy in 1850), the customary two-months’ suspension of the certificate in the meeting-room, and the formal vote by ballot, be dispensed with; and Mr. Wallace was accordingly elected by acclamation.

#### *Exhibitions, &c.*

Mr. Stainton exhibited some young Lepidopterous larvæ mining the leaves of the hazel. The same larva had been found in the leaves of *Ribes sanguineum*, and in the North of England in birch leaves. It retained the mining habit only for a short time, and subsequently became an external feeder. The larva was that of an *Incurvaria*, and would probably prove to be *I. pectinea*.

Mr. Stainton exhibited some dead larvæ of *Hyponomeuta padella* on apple leaves. They had been transferred, when quite young, from their natural food, the hawthorn, to an apple tree, which was the usual food of a closely-allied form: the transferred larvæ had at first commenced eating the apple leaves, but soon ceased to do so, and died, apparently for no other reason than that the food did not agree with them. This fact was adduced not only as an instance of inability on the part of the larvæ to adapt themselves to circumstances, but also as having a material bearing upon the question of the specific distinctness of the hawthorn-feeding and apple-feeding forms of *Hyponomeuta*.



Mr. S. Stevens exhibited some twigs of lime trees, gathered at Kennington, which had been completely stripped of their leaves (whole trees having shared the same fate) by the larvæ of a Tortrix, apparently belonging to the genus *Lozotania*.

Mr. Bond exhibited three varieties of the male of *Anthocharis Cardamines*, a species but little liable to variation, all captured near London; and a hermaphrodite of the same species, also captured near London, and having female characters on the right side and male characters on the left side.

Mr. Bond also exhibited a hermaphrodite *Papilio Machaon*, from Whittlesea Mere, in which again the right side was of the female form and the left of the male form.

The President exhibited drawings of two hermaphrodite honey bees. In the first specimen the right side partook of the male characters, the antenna, eye, anterior leg and intermediate leg being male, and the wing and posterior leg being female or worker; the left side was entirely worker. The second specimen was partly male, partly worker; the antenna, eye, wing and legs, on the left side were all of the true male form, and the abdomen was considerably enlarged on the same side.

The President also exhibited specimens of *Braula cæca*, an insect which had been found on the Continent to be very destructive to honey in hives; it had only recently been imported into this country along with the *Apis Ligustica*, from a hive of which species the exhibited specimens had been taken.

Mr. Waterhouse exhibited British specimens of a species of *Homalota*, which, being apparently undescribed, he named and characterized as follows:—

“*HOMALOTA PLANIFRONS*, *n. s.*”

“*Hom. linearis*, depressiuscula, parum nitida, fusco-nigra; elytris fusco-testaceis, basi fuscis; pedibus testaceis, femoribus fusciscentibus; capite subquadrato, fronte plano; thorace subquadrato, coleopteris angustiore, suprâ leviter canaliculato, posticè latè foveolato; abdomine segmentis 4 primis crebrè punctulatis, segmento quinto parcius punctato, sexto fere lævigato. Long. 1½ lin.

“*Mus.* Abdominis segmento sexto dorsali tuberculo compresso munito.

“In size, form, colouring, and in the structure of the antennæ, this species very closely resembles the *Homalota gregaria*; it, however, may be readily distinguished by the larger size of the head, and the subquadrate and depressed form of this part; the parts of the mouth being more produced, and the fifth abdominal segment being rather sparingly punctured. The male characters are moreover very different, nearly resembling those of *H. sulcifrons*, Kirby (*H. pavens*, Erichs.). From this insect *H. platycephala* differs in being smaller and narrower, in the form of the head, and in having the anterior abdominal segments rather less thickly punctured, and the fifth segment somewhat sparingly punctured.

“The head in bulk is very nearly equal to the thorax, and the part behind the antennæ is nearly square, but a trifle broader than long, and has the angles rounded; the upper surface is depressed, rather more so in the male than in the female, and has a faint longitudinal groove; the surface is most indistinctly punctured. The antennæ are uniformly fuscous, and when compared with those of *H. gregaria* present no appreciable difference. The thorax is nearly quadrate, but slightly contracted behind; it has a shallow transverse fovea behind, and a shallow longitudinal depression extends forwards from this to the middle of the thorax; in the male is a distinct dorsal

channel, extending to the front of the thorax; the surface is very thickly and finely punctured. The elytra are but little longer than the thorax, but nearly one-third broader; they present scarcely any gloss, being very thickly and finely punctured, and having a correspondingly fine and dense pubescence; they are fuscous at the base, and gradually assume a paler hue towards the apex. The abdomen is glossy, sometimes pale at the apex. The legs are slender, as in *H. gregaria*, but rather longer. The tarsi are elongate, and in those of the hinder legs the first joint is pretty distinctly longer than the following three joints, as in the insect last mentioned, and which no doubt induced Erichson to describe it as a member of the genus *Tachyusa*.

"The sixth abdominal segment in the male is furnished with a small laterally compressed tubercle, and the terminal segment has the middle portion of the upper plate produced and terminating in four denticles, of which the middle pair are approximated and most prominent; the external pair are slightly obtuse, and are separated by a deep nearly semicircular notch from a spine forming the outermost lateral boundary of the plate, and the apex of which terminates nearly on the same plane as the outer pair of denticles.

"I possess five specimens of this species, four of which were taken in the corridor of the Crystal Palace, and the fifth was found by one of my sons in the court yard of the British Museum. Two of these are males: in one of the males, and in one female, the thorax presents on its disk a large and tolerably deep oblong impression, as is frequently seen in *H. gregaria* and some other species. In one specimen both thorax and elytra are palish brown, perhaps from immaturity."

Mr. M'Lachlan exhibited three new British species of Trichoptera, on which he read the following notes:—

"1. *Hydropsyche ophthalmica*, Rambur. Taken by myself, I believe between Kew and Richmond, and by Mr. Wormald at the same place. Readily distinguishable from all other described species by the large size of the eyes in the male, the vertex from this cause being almost quadrangular. Kindly determined for me by Dr. Hagen, who has seen Rambur's types.

"2. *Philopotamus? columbina*, Pictet. Taken by Mr. Wormald at Llangollen, North Wales, in September, 1862, and by myself near Bickleigh, Devon, in the same month. This is not a true *Philopotamus*, belonging to the same group as *Hydropsyche occipitalis*, *Pict.* (*Apelocheira subaurata*, *Steph.*), and closely allied to that species, but differing in its slightly smaller size and darker colour, and by the structure of the last abdominal segment in the male, there being a deep notch in the middle of the upper margin, which is absent in *H. occipitalis*.

"3. *Psychomia (Homocerus) derelicta* (n.s.). I propose this name for an insect belonging to a rather obscure group, and which I cannot make out to have been previously described; a specimen sent to Dr. Hagen last year was returned as unknown to him. It belongs to a group mentioned by Dr. Hagen in the 'Stettiner Entomologische Zeitung' for 1860, p. 279, differing from the true *Psychomiæ* in the broader and more obtuse wings, in the more widely dilated intermediate legs of the female, and especially in the possession by that sex of a rather long and curved ovipositor; nevertheless Dr. Hagen thinks that the proper place of the group is with *Psychomia*. Kolenati, in the second part of the 'Genera et Species Trichopterorum,' places it as a subgenus of *Tinodes*, which he calls *Homocerus*, a position it can scarcely retain, as the females of *Tinodes* have undilated intermediate legs. Kolenati describes four species under

the names of (1) *albipunctatus*, *Steph.*, known to him only from description; the type of Stephens' species is a small *Hydropsyche*; (2) *obscurus*, *Steph.*, which cannot be Stephens' species, the type of which is a female of *Glossosoma fimbriata*, *Steph.*; (3) *affinis*, *Kolenati*, a new species, differing in the venation of the under wings; and (4) *pusilla*, *Fabricius*, of which I may say that what Fabricius' species really is must, I think, always remain conjectural: *pusilla*, *Stephens*, is a true *Psychomia*, and the same as his *phæopa*; *pusilla*, *Curtis*, is a small True *Tinodes*.

"I have drawn up the following diagnosis of the new species.

"*PSYCHOMIA (HOMOCERUS) DERELICTA.*

"*Nigro-fusca*; *antennis saturate brunneis, testaceo annulatis; palpis brunneis; capite thorace abdomineque nigro-fuscis; oviducto testaceo-fusco, sursum incurvato; pedibus fuscis, vix testaceis; alis anticis fuligineo-fuscis, vix iridescentibus, dense pilosis; posticis fusco hyalinis.* (*Fem.*)

"*Long. corp. 1½ lin.; exp. al. 5—6 lin.*

"Of this I have seen five specimens, all of which are females. It has been taken by Mr. Parfitt near Exeter, by Mr. Fenn at Wallingford, by Mr. Barrett at Haslemere, in July, and by myself near Kew, in August. It is larger and darker than the other described species."

Mr. Stainton exhibited specimens of *Tinea vivipara*, *Scott*, and read the following notice of the habits of that species:—

"This insect has been described in the first part of the 'Transactions of the Entomological Society of New South Wales,' by the Hon. A. W. Scott, of Ash Island, Hexham, which is about seventy-five miles N.N.E. of Sydney. The specimens exhibited were captured by Mr. Diggles at Moreton Bay, which is three hundred miles further to the north. Its beauty is not the only interest which this elegant species possesses, for it appears from the observations of Mr. Scott that the females do not deposit eggs, but living larvæ.

"It was after dark, in the early part of the month of October, 1861, that we first captured a specimen with the hand, being attracted at the moment by its elegant colouring, and wishing to secure it for the cabinet. Fearful that the plumage might be injured by the struggles of the moth while endeavouring to escape, it was gently compressed, and on opening the hand we observed numbers of minute but perfect larvæ being ejected from the abdomen in rapid succession, and moving about with considerable celerity, evidently in search of suitable shelter and food. This incident, so singular and new to us, required further confirmation, and consequently many more of a similar kind (of course all females) were caught and attached to corks previously covered with black paper, and subjected to the closest scrutiny. These moths shortly commenced to deposit their living progeny with rapidity, the small white fleshy larvæ being seen with great distinctness on the black surface of the paper, thus affording clear and satisfactory proof that this insect—the only one of its order at present known to be so—is unquestionably ovo-viviparous, and will represent in future this peculiarity among the Lepidoptera, similarly to those few species existing in the hemipterous and dipterous orders.

"This fact having been ascertained our attention was incited to the care of the little strangers, and to procure suitable shelter and food for them, in the hope that we

should be able to rear them, and thus to supply a correct account of their metamorphoses. In this we were guided by the form of the perfect insect, and accordingly placed before them grains of maize, pieces of flannel and woollen cloth, shreds of partially decayed paper, some fungus and lichen, and other materials known to be the food of caterpillars belonging to the genus *Tinea* and neighbouring genera. Unfortunately they turned with distaste from all these supplies, with the exception of the cloth and flannel, and even to these they attached themselves with reluctance. We, however, persevered, and put them in a dark and roomy box, aware of the marked dislike to light of larvæ possessing depredatory habits, and left them undisturbed for a week, at the end of which we were pleased to find that small silken tunnels or tubes had been constructed on the surface of the brown cloth, and that the denuded appearance of several places exhibited signs of their ravages. From this cloth they shortly afterwards transferred themselves to the flannel, where they fabricated small portable cases, composed of two separate pieces of an irregular oval form, joined at the sides, but leaving apertures at each end, and being thus comfortably housed we entertained sanguine hopes of rearing them. These hopes, however, were not to be realized, for towards the end of November (nearly two months from their birth) they ceased to thrive, and eventually all perished. \* \* \* \*

“As we failed in affording proper nourishment to the larvæ, we think it probable that they exist in their natural state upon decaying animal or vegetable matter, as found to be the case with the *Sarcophaga carnaria* (or common blowfly) and some others which produce their young in a living state.’—(Trans. Entom. Soc. of N. S. W. Vol. i. Part 1).

“It will now be a problem for European Micro-lepidopterists to ascertain whether any of our European species of the genus *Tinea* have a similar habit. When Dr. Staudinger was in Spain he met with one larva of this genus (if I remember rightly) which fed on dry dung. Is it not possible that some species of the genus may feed on the freshly dropped dung of animals, and hence the larvæ require to be deposited in an active state? Many of the larvæ of the *Tinæ* of Europe are still unknown to us; possibly a clue is now furnished which may prove of service.”

Mr. Stainton read the following:—

*Notes on the ‘Proceedings of the Entomological Society of Philadelphia.’*

“I have before me the ‘Proceedings of the Entomological Society of Philadelphia’ from March, 1861, to the close of 1862, forming nine parts of variable bulk, and extending to 311 pages. These ‘Proceedings’ are well printed on good paper, and contain several memoirs of considerable importance, so that it is extremely desirable that the existence of an Entomological Society on the other side of the Atlantic should be generally known to the entomologists of Europe.

“It does not appear from these ‘Proceedings’ when the Entomological Society of Philadelphia was first started. In the Report of the Secretary for 1861 we read that ‘the cabinet was commenced in January, 1860,’ which is fourteen months before the earliest meeting recorded on the second page of the ‘Proceedings,’ at which ‘the Committee appointed to revise the Constitution and By-Laws prior to procuring a Charter made their final Report.’ However, it appears from the by-laws that the common seal of the Society was to bear the words ‘Founded 1859.’ It is interesting at the very time when we are called upon to decide the question of the dispersion of our own collection to notice how energetically this young Society is engaged in the



task of forming a collection. Thus we read that 'the contributions to the cabinet during the past year have been both numerous and valuable. In Coleoptera there is an increase of 520 species, 8885 specimens during the past year; in Lepidoptera an increase of 198 species, 2169 specimens; in Diptera an increase of 75 species, 235 specimens,' &c.; 'as a whole the interest manifested by the members in building up the collections of the Society has been exceedingly liberal and enthusiastic. The cabinet was commenced in January, 1860, and since then 3678 species have been presented.'

"The library of the Society, we are informed in the same Report, 'now contains 129 volumes and pamphlets,' and the Society numbered in December, 1861, '53 members and 27 correspondents.'

"In the report of the Recording Secretary for 1862 we find an increase to the collection of 1514 species, and an increase to the library of 344 volumes and pamphlets, including a number of rare and valuable works, and the Society numbered in December last 65 resident and 48 corresponding members.

"In the papers already published, 51 pages are devoted to Coleoptera, 4 to Neuroptera, 83 to Hymenoptera (45 of which are occupied with a paper by Osten-Sacken, on the Cynipidæ of the North-American Oaks), 53 to Lepidoptera, 22 to Hemiptera and 22 to Diptera.

"Amongst the coleopterous papers are two short papers on the habits of some coleopterous larvæ and pupæ, by G. H. Horn; one with descriptions of fourteen larvæ of North-American Coleoptera belonging to genera the preparatory states of which had not, to the knowledge of the writer (Baron R. Osten-Sacken), been made known before; one with descriptions of four new North-American Coleoptera, by Dr. Horn; and one with descriptions of nine supposed new species of Cerambycidæ, by J. H. B. Bland.

"Among the hymenopterous papers are the elaborate treatise (already mentioned) on the Cynipidæ of the North-American oaks and their galls, by Baron R. Osten-Sacken, and two with descriptions of (seven and six) new species of Tenthredinidæ, by E. Norton.

"Amongst the lepidopterous papers are four by Dr. Clemens, of which three are devoted to Micro-Lepidoptera, and one contains a Synopsis of the families of the Heterocera. The first paper on Micro-lepidopterous larvæ furnishes a good introduction to the successful study of those insects; a description is given of the modes of feeding of the larvæ of the genera *Coleophora*, *Lithocolletis*, *Aspidisca*, *Nepticula*, *Ornix* and *Catantega*, the number of species of which Dr. Clemens gives the habit of the larvæ in these genera being 7, 2, 2, 14, 1 and 3. The last-named genus is probably, however, as he suspects, allied to the Phycidæ, and not referable to the Tineina; the second Micro-lepidopterous paper contains descriptions of nine new species, including one of the curious genus *Opostega*; the third paper contains a notice of *Bedellia somnulentella*, bred from the leaves of *Ipomæa purpurea*, and of two new larvæ of the genus *Nepticula* in the leaves of the sycamore. Amongst the remaining papers on the order may be noticed Mr. Edwards' notes on *Grapta Comma*, *Harris*, and *Grapta Faunus*, *Edwards*, the latter species having been confounded by some authors with the European *Grapta C-album*; and Mr. Lintner's notes on the metamorphoses of *Ceratomyia quadricornis*, one of the Sphingidæ, in which we have a very detailed account of the whole process, from the egg to the pupa state, a change which is completed in six weeks. Mr. Edwards has given descriptions of four diurnal Lepidoptera occurring

in the United States, which are figured in Doubleday's 'Genera, but undescribed; they are *Argynnis Astarte*, *Melitæa Chalcedon*, *M. Anicia* and *Timetes Coresia*.

"The hemipterous papers are two in number; a short descriptive paper by P. R. Uhler on some new species, including a *Capsus*, which in some seasons is very plentiful on the *Robinia Pseudacacia*; and a highly philosophical paper on the genera of *Aphidæ* found in the United States, by Benjamin D. Walsh. In allusion to the probability of differences in the larval form of *Aphides* being correlated with the variation of the food-plant, and not necessarily implying that the two are specifically distinct, Mr. Walsh cites the case of the larvæ of *Datana ministra* (one of the *Notodontidæ*), which are always vittate with yellow, and with the upper surface of the first (second) segment yellow, when they feed on oak-apple, &c.; but when these larvæ feed on hickory or walnut they are entirely black, and yet between the moths produced from them there is no appreciable difference. Mr. Walsh in his summary tabulates the previously described species of *Aphidæ* in the United States as fifty-seven in number, and the new species described in this paper as thirteen, making a total of seventy.

"The only dipterous paper is on the characters of the larvæ of *Mycetophilidæ*, by Baron R. Osten-Sacken. This paper contains '1st. A comparative description of the external anatomy of the principal genera in their larval form. 2nd. A brief account of what is known about the habits of each genus. 3rd. A list of references, with a short notice on the importance of each.'

"The only neuropterous paper is a short one by Mr. Buckley, descriptive of two new species of *Termites*. Why the *Neuroptera* should have attracted so very little attention is not apparent, but probably some important contributions on that order will shortly appear, and then the students of all the principal Orders of insects will find matter to interest them in the 'Proceedings of the Entomological Society of Philadelphia.'

"I annex a classified list of the papers already published, with references to the pages where they will be found."

#### COLEOPTERA.

"Catalogue of the *Cicindelidæ* of North America," by E. T. Cresson. Pp. 7—20.

"Notes on the Habits of some Coleopterous Larvæ and Pupæ," by G. H. Horn. Pp. 28—30.

"Observations on the Habits of some Coleopterous Larvæ and Pupæ," by G. H. Horn. Pp. 43, 44.

"Catalogue of the Longicorn Coleoptera taken in the vicinity of Philadelphia," by J. H. B. Bland. Pp. 93—101.

"Descriptions of some Larvæ of North-American Coleoptera," by Baron R. Osten-Sacken (with a plate). Pp. 105—130.

"Descriptions of some new North-American Coleoptera," by G. H. Horn, M.D. Pp. 187—188.

"On Winter Collecting," by H. T. Fay. Pp. 194—198.

"Descriptions of several supposed new Species of *Cerambycidæ* in the Collection of the Entomological Society of Philadelphia, with Observations on some already Described," by J. H. B. Bland. Pp. 267—276.

#### NEUROPTERA.

"Descriptions of Two New Species of *Termites* from Texas," by S. B. Buckley. Pp. 212—215.

## HYMENOPTERA.

"Catalogue of the Described Species of Tenthredinidæ and Uroceridæ inhabiting North America," by E. T. Cresson. Pp. 33—39.

"On the Cynipidæ of the North-American Oaks and their Galls," by Baron R. Osten-Sacken. Pp. 47—72.

"Additions and Corrections to the above Paper," by Baron R. Osten-Sacken. Pp. 241—259.

"The Tarantula (*Mygale Hentzii*, *Girard*) and its Destroyer (*Pompilus formosus*, *Say.*)," by S. B. Buckley. Pp. 138, 139.

"Notice of several New Species of Tenthredinidæ," by E. Norton. Pp. 143, 144.

"Descriptions of several New Hymenoptera," by E. Norton. Pp. 198—200.

"On the Synonyms of *Cimbex Americana*," by E. Norton. Pp. 201, 202.

"A Catalogue of the Described Species of several Families of Hymenoptera inhabiting North America," by E. T. Cresson. Pp. 202—211 and 227—238.

## LEPIDOPTERA.

"Micro-Lepidopterous Larvæ—Notes on a few Species the Imagos of which are probably Undescribed," by Brackenridge Clemens, M.D. Pp. 75—87.

"New American Micro-Lepidoptera," by B. Clemens, M.D. Pp. 131—137.

"North-American Micro-Lepidoptera," by B. Clemens, M.D. Pp. 147—151.

"Synopsis of Families of Heterocera," by B. Clemens, M.D. Pp. 173—181.

"Notes upon *Grapta Comma*, *Harris*, and *Grapta Faunus*, *Edwards* (*Grapta C-album* of some Authors)," by W. H. Edwards. Pp. 182—184.

"Additions to the Catalogue of United States Lepidoptera," by A. R. Grote. Pp. 218, 219.

"Descriptions of Certain Species of Diurnal Lepidoptera found within the United States, figured in Doubleday's 'Genera,' but Undescribed," by W. H. Edwards. Pp. 221—224.

"Description of a supposed New Species of *Ægeriidæ* from Virginia, and Observations upon *Papilio Damus*, *Boisd.*" by James Ridings. Pp. 277, 278.

"Metamorphoses of *Ceratomyia Quadricornis*, *Harris*," by J. A. Lintner. Pp. 286—293.

## HEMIPTERA.

"Descriptions of a few New Species of Hemiptera, and Observations upon some already Described," by P. R. Uhler. Pp. 21—24.

"On the Genera of Aphidæ found in the United States," by Benjamin D. Walsh, M.A. Pp. 294—311.

## DIPTERA.

"Characters of the Larvæ of *Mycetophilidæ*," by Baron R. Osten-Sacken (with a plate). Pp. 151—172.

The Secretary read a letter from Mr. C. A. Wilson, a Corresponding Member of the Society, which bore date Adelaide, March 26, 1863, and contained a brief account of the natural-historical results of the exploring party under Stuart, which had recently succeeded in traversing the Australian Continent from the South to the North-West Coast and back again. About fifteen hundred specimens of insects had been obtained,

but none of the Orders Orthoptera, Neuroptera, Diptera or Lepidoptera; many Lepidoptera were seen, including some butterflies of singular form and beautiful colouring, but, owing to the accidental loss of all his entomological apparatus, Mr. F. G. Waterhouse, the naturalist attached to the expedition, had been unable to capture any. A few Hymenoptera had been obtained, and some Hemiptera, nearly all Scutelleridæ. In Coleoptera a new Cicindela, the first representative of that family in the South-Australian province: upwards of fifty specimens were knocked down one damp evening, about six hundred miles north of Adelaide; the species was of large size, smooth, and of a brilliant metallic green colour. There were a few new forms of Carabidæ, and many species of Dyticidæ and Gyrinidæ, evidently quite new. The South-Australian species were generally unicolorous, but these were spotted or banded with different colours. Of Staphylinidæ or Paussidæ none; of Lamellicorns but few; some of Copris?; a few Cetoniæ; some large and handsome Buprestidæ, probably new; and many additions to Agrilus and the allied genera. There were many new Heteromera, Curculionidæ both large and small, and several distinct species of a genus with long antennæ, which was either curculionideous or was intermediate between the Curculionidæ and the Longicorns. Of the last-mentioned tribe there were also a few representatives, principally Lamidæ, which did not occur in any of the South-Australian collections.

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*Special General Meeting.*

June 1, 1863.—FREDERICK SMITH, Esq., President, in the chair.

The Secretary read the notice by which the Special Meeting had been convened for the purpose of considering the following Resolution of the Library and Cabinets Committee, adopted at its Meeting of the 30th of March, 1863:—

“That the present income and the financial prospects of the Society do not warrant this Committee in believing that the Society is or will be able to provide the sums requisite for forming a Collection of British Insects which shall be worthy of the Society, and for maintaining the same in a satisfactory state.

“This Committee therefore recommends to the Council that the Society's Collection be discontinued, and that proper steps be taken for the disposal of the specimens and cabinets.

“The Committee, however, further recommends that the type-specimens be not dispersed, but be placed in some public Institution where they will be readily accessible and available for scientific purposes; and the Committee suggests the feasibility of some arrangement by which the specimens in question might be placed in the British Museum.”

It was moved by Mr. Pascoe, and seconded by Dr. Baly:

“That the recommendations of the Library and Cabinets Committee, contained in their Report to the Council of the 30th of March, 1863, be carried into effect in such manner and at such time as the Council, in its discretion, shall think fit.”



An Amendment was moved by Mr. J. W. May, and seconded by Mr. Edwin Shepherd :

"That the whole of the Society's Collection of Insects be sold, the type-specimens as well as the others."

The Meeting, having been also addressed by Mr. Francis, Mr. Waterhouse, Mr. Desvignes and Mr. Dunning, the Amendment was, on a show of hands, declared to be lost.

The President then put the original Resolution, when the numbers were—for the Resolution, 22; against, 0.—*J. W. D.*

*A Bat eating Bacon.*—At a farm-house near Guildford, in Surrey, when the bacon which had been placed up the kitchen chimney for the purpose of being smoked was taken down, it was found nibbled in several places, and in one flitch was a round hole, about the dimensions of an ordinary rat's hole; but the damage did not stop here, for on cutting the flitch through we found the whole of the best part had been devoured: it was hollowed out most carefully all under the rind, but the one hole above mentioned was the only orifice visible from outside. On making inquiries I was told that the mischief was done by the "flutter-mouse," or shorteared bat (*Vespertilio murinus*), which is very numerous in the neighbourhood; and one labourer assured me that he knew of an instance in which the decayed remains of a bat were found in a ham thus hollowed out. I was dubious at first, and attributed the robbery to rats, whose predilection for bacon is well known; but when I remembered that a turf fire had been burning on the hearth every day since the bacon was first placed in the chimney I was inclined to believe my informant.—*M. F. Coussmaker*; 17, Charles Street, Milford, Pembrokeshire, May 29, 1863.

*A List of British Birds found in South Africa.*

By J. H. GURNEY, Esq., M.P.

I HAVE personally examined South-African specimens of all the following species, except those which are marked with an asterisk, and which I have added to the list on such authority as appears to me to be fully reliable.

Egyptian Vulture (*Neophron percnopterus*). South Africa generally; rare in Natal.

Griffon Vulture (*Gyps fulvus*). South Africa generally.

Osprey (*Pandion haliaetus*). Cape Colony, Natal.

Peregrine Falcon (*Falco peregrinus*). Natal. I have only seen one South-African specimen of this falcon. A nearly allied South-African

species (*Falco minor* of Bonaparte) has been sometimes erroneously confounded with the true *F. peregrinus*, but is undoubtedly distinct.

Orangelegged Hobby (*Erythropus vespertinus*). Damara Land.

Honey Buzzard (*Pernis apivorus*). Natal; rare.

Montagu's Harrier (*Circus cineraceus*). Damara Land.

Barn Owl (*Strix flammea*). Cape Colony. This owl, which is also found in the island of Madagascar, must not be confounded with *Strix capensis* of Smith, which is a very distinct South-African species.

Common Swift (*Cypselus apus*). Natal. This swift is found in the colony of Natal throughout the year, but is more numerous during the colonial "summer" than at other seasons.

Chimney Swallow (*Hirundo rustica*). Damara Land, Natal. The chimney swallow arrives in Natal in November, and leaves in March and April. The specimen examined by me (which was from Natal) was slightly more rufescent on the abdomen than is usual in British examples.

\*European Roller (*Coracias garrula*). Natal.

\*Woodchat Shrike (*Lanius rufus*). Cape Colony.

Redbacked Shrike (*L. collurio*). Damara Land, Great and Little Namagua Land, Cape Colony.

Spotted Flycatcher (*Muscicapa grisola*). Damara Land.

Stonechat (*Pratincola rubicola*). Cape Colony, Natal.

Willow Wren (*Sylvia trochilus*). Damara Land. The individual which I examined was barely so large as an ordinary English specimen, but appeared identical in other respects.

European Quail (*Coturnix dactylisonans*). Damara Land, Natal. These quails arrive in Natal during the months of April, May and June, and leave early in the colonial "spring."

Collared Pratincole (*Glareola torquata*). Natal.

\*Gray Plover (*Squatarola helvetica*). Damara Land, also in Madagascar.

Ring Dotterell (*Ægialites hiaticula*). Natal.

\*Turnstone (*Streptilas interpres*). Damara Land, Cape Colony and Mosambique; also in Madagascar.

\*European Oystercatcher (*Hæmatopus ostralegus*). Mosambique.

\*Blackwinged Stilt (*Himantopus melanopterus*). Damara Land.

Ruff (*Machetes pugnax*). Damara Land, Cape Colony, Natal.

Curlew Sandpiper (*Tringa subarquata*). Damara Land, Cape Colony, Natal.

\*Little Sandpiper (*T. minuta*). Damara Land.

Common Sandpiper (*Totanus hypoleucos*). Cape Colony, Natal; also in Madagascar.

Wood Sandpiper (*T. glareola*). Natal.

Greenshank (*T. glottis*). Damara Land, Mosambique, Natal.

Great Snipe (*Gallinago major*). Natal. The great snipes arrive in Natal in September and October, and leave in January or February.

\*Whimbrel (*Numenius phaeopus*). Mosambique; also in Madagascar.

Common Curlew (*N. arquata*). Mosambique, Natal.

White Stork (*Ciconia alba*). Natal.

Common Heron (*Ardea cinerea*). Mosambique, Natal; also in Madagascar and the Mauritius.

Purple Heron (*A. purpurea*). Mosambique, Natal; also in Madagascar.

Little Egret (*A. garzetta*). Mosambique, Natal.

Buffbacked Heron (*A. bubulcus*). Natal; also in Madagascar.

Squacco Heron (*A. comata*). Natal; also in Madagascar.

European Little Bittern (*Ardetta minuta*). Natal. This species must not be confounded with a nearly allied but distinct species of little bittern, which is also found at Natal, *Ardetta podiceps* of Bonaparte.

Water Rail (*Rallus aquaticus*). Damara Land, Natal.

Corn Crake (*Crex pratensis*). Natal. The corn crake is only found at Natal during the colonial "summer."

Baillon's Crake (*C. Baillonii*). Damara Land.

European Waterhen (*Gallinula chloropus*). Damara Land, Cape Colony, Mosambique, Natal; also Madagascar, Mauritius and Bourbon.

Little Grebe (*Podiceps minor*). Damara Land, Cape Colony, Natal; also Madagascar.

J. H. GURNEY.

*The Osprey in Shetland.*—About a week ago a fine female osprey was brought to me by a lad who had just shot it upon the sands at Burrafirth, as it was sitting at the mouth of a burn, devouring a sea trout. The stomach contained nothing besides pieces of fish, and in the ovary I found eggs about the size of BB shot. Another bird, which from its small size is supposed to be a male, was frequently seen in company with it, and is still in this neighbourhood. Dr. Edmondstone informs me that he has very rarely observed this species in Shetland.—*Henry L. Saxby; Baltasound, Shetland, June 10, 1863.*

*The Osprey near Bury St. Edmund's.*—On Thursday, May 28th, a fine male osprey was caught by a labouring man in a tree near Bury St. Edmunds. When captured

it had a circular steel trap attached to its left foot, by which it had become entangled in the branches, and which it had evidently carried for some time, the wound caused by it having nearly healed, though the leg and foot were still much enlarged. It was purchased by Mr. Bilson, taxidermist, of Bury, from whom I obtained it on the 3rd of June.—*Thomas H. Allis; York, June 25, 1863.*

*Correction of an Error.*—In my paper on the occurrence of rare hawks (*Zool.* 8523) I have been informed of an error. Read "Greenland falcon (*F. grænlandicus*)" instead of "Iceland falcon."—*H. Blake-Knox; Bartragh, Dalkey, Co. Dublin, May 27, 1863.*

*The Jer Falcon and Orangelegged Hobby in Devonshire.*—When I was at Devonport, a few days since, I took the opportunity of calling upon Mr. Pincombe, naturalist, to ascertain some particulars of the capture of the jer falcon at or near Port Eliot, St. German's, which took place several years since. He has still the bird in his possession, and in remarkably good preservation: it is a good example of a male bird three or four years old. The specimen which was killed at the Lizard some years since, and which passed into the hands of the late Mr. Humphrey Grylls, of Helston, was, I think from its larger size, a female bird. Both this and Mr. Pincombe's bird show symptoms of approaching maturity, from the brown spots being at the tip of the feathers, instead of the feathers having a general border or margin of this colour, which is the first change after the brown adolescent plumage. We thus can claim this fine Arctic falcon as having occurred in the eastern as well as the western part of Cornwall. Mr. Pincombe at the same time called my attention to an adult specimen of the orangelegged hobby, which was sent to him from the parish of Wembury, on the Devonshire side of Plymouth Sound, some years since. We may all but claim this species as an addition to the Cornish Fauna, as the exact spot where it occurred, although in Devonshire, is within two or three miles of Cornwall. This is the example of the bird which Mr. Yarrell refers to as having been in a Museum at Devonport, and killed not far off.—*Edward Hearle Rodd; Penzance, June 12, 1863.*

*The Goshawk (Falco palumbarius) Nesting in Yorkshire.*—This spring the nest of this rare bird was found in some ivy which surrounds an old oak tree which is situate in the boundary hedge of a plantation. I did not see the nest, but the three eggs were of a very pale blue. They were unfortunately broken by one of the possessor's children.—*J. Ranson; York.*

*Abnormal Nests of Missel Thrush, &c.*—I have sent you a few nests, and in doing so I have confined myself chiefly to common varieties not mentioned in 'Birdsnesting.' When the controversy arose on the nest of the missel thrush, several correspondents wrote in rather an acrimonious spirit, attributing an inaccuracy in your description, which, it will be found, did not wholly exist. Respecting the mud-lined nests, it is certain that they are much commoner in rainy seasons; but I am unable to account for this, except on my own hypothesis, which is this: the missel thrush is a well-known early breeder; the eggs would therefore, in a wet spring, run a great risk of being chilled did not the bird provide against such a catastrophe by lining its nest with mud, which, when thoroughly dry, would, comparatively speaking, be impervious to exterior dampness. I have been led to this conclusion from having, on more than one occasion, seen the old bird sitting in a mud-lined nest,—as I presume, to assist in drying the mud,—some few days before finally lining it with fine dried grass. I have enclosed two of these unfinished nests, Nos. 2 and 7, taken on the 20th of March, 1862. The nests forwarded may be thus described:—



**Missel Thrush.**—No. 1. Coarse grass, a few feathers, with a little mud, and lined with fine dried grass. I think this is the only nest of the missel thrush I have ever seen without Ramalina, more or less. No. 2. A few dead sticks, dried stalks, moss and lichen; lined with mud. No. 3. A quantity of *Ramalina fraxinea*, var. *farinacea*, &c., and a few dead twigs; and lined with fine grass. No. 4. Dead twigs, coarse vegetable stalks, moss, wool and Ramalina; lined with fine dried grass. No. 5. Entirely of Ramalina and a few dead twigs outside; lined with fine grass. No. 6. Ramalina, dried vegetable stalks and a little mud; lined with fine grass. No. 7. Dead fir twigs, moss, wool, lichen and grass; lined with mud.

**Linnet.**—No. 1. Fibrous roots and moss; lined with wool and horse-hair. This is certainly the normal type of linnets' nests. No. 2. Roots of *Triticum*; lined with fibrous roots. No. 3. Grass and fibrous roots; lined with wool and horse-hair. No. 4. Dried stalks of herbaceous plants, moss and fibrous roots; lined with wool, a few feathers and horse-hair.

**Greenfinch.**—No. 1. Coarse grass, a little moss; lined with wool and horse-hair. No. 2. Dead fir twigs, moss and bark of *Clematis vitalba*; lined with wool, hair and feathers. No. 3. Roots and moss; lined with grass, wool and a few feathers. No. 4. Roots and moss; lined with fibrous roots, wool and feathers. No. 5. Roots, wool and moss; lined with fibrous roots, wool and a little horse-hair.

Colonel Montagu's description of the nest of the ciril bunting appears to me incorrect, in that it differs not from the normal type of yellowhammers' nests, as you will see by the two specimens of the latter enclosed. I have taken several nests of the ciril bunting, but never found one lined with fibrous roots. The nest sent may, I think, be safely taken for the usual type. I have also inclosed you the two varieties of the eggs of *Regulus cristatus*: it is difficult to say which should be described as the typical colour; they are equally common.—*Henry Reeks; Thruxton.*

[The nests so kindly transmitted to me are most interesting, and speak for themselves; but, as my readers cannot examine and handle them, I publish my correspondent's notes, which are very explicit. With regard to the "acrimonious spirit" exhibited by some of my critics, I believe that Mr. Reeks does not allude to anything in the 'Zoologist,' but to the lucubrations of a beginner in another journal: experience will undoubtedly convince the critic both of his mistake as to matter of fact, and also as to the impropriety of acrimonious writing on this or any other subject connected with Science.—*Edward Newman.*]

**Blackbird Nest-building.**—A blackbird built her nest this spring in my garden, in a white currant bush. On the Saturday there was not a straw laid, but the nest was finished and lined on the Tuesday night following, and the first egg was laid on Thursday. From long observation on birds and their habits I have every reason to believe that the male bird gives very little, if any, assistance to the hen in the construction of their nest.—*J. Ranson; York.*

**Blackbirds' and Treecreepers' Nests on the Ground.**—On the 10th of May I found in Methven Woods two blackbird's nests built on the ground, as if the birds had scooped out a place for their nest. One contained three eggs, bright blue with scarcely any spots on them. The nests were quite unsheltered, although there were plenty of bushes suitable for them to build in. The second was made at the side of a ditch, at a short distance from the other, and contained four eggs. I likewise know of a tree creeper's nest on the ground, under shelter of the stump of an old tree. The nest contains six eggs hard set. On the 1st of May I watched the birds carrying material for

their nest, which was composed of the inside of the old tree with hay, and lined with feathers. The nest is about three yards from the edge of a pond, measures two inches across, and one and a half inch in depth.—*T. Brunton; Methven Castle, Perth, May 23, 1863.*

*Value of the Redstart in a Garden.*—A pair of redstarts, who have a nest in my garden, have done me great service by devouring those pests of the garden, the gooseberry grub. From frequent observations I am convinced that a pair of redstarts (during the time their young require their attention) will destroy at least six hundred grubs and caterpillars in a day. I am glad to say that in our neighbourhood these pretty, interesting and useful birds are on the increase.—*J. Ranson; York.*

[I am very glad to receive this information: I have never had ocular demonstration of any bird, excepting the cuckoo, actually eating the gooseberry grub.—*Edward Newman*].

*Snow Bunting in June.*—This morning I was much surprised to observe a snow bunting, apparently in full summer plumage, upon a heap of loose stones in the cornyard at Halligarth. It took wing as I approached, and, uttering its well-known ringing notes, fluttered wildly above the neighbouring fields for a short time, and then disappeared in the direction of the hills. I have lately seen two pairs about the cliffs at Burrafirth, from which I obtained a nest and three eggs on a previous occasion. (*Zool.* 7709).—*Henry L. Saxby; Baltasound, Shetland, June 13, 1863.*

*The Hawfinch Breeding in Yorkshire.*—On the 13th of June a nest of the hawfinch was found in a wood at Hardcastle Crags, near Hebden Bridge, in the West Riding of Yorkshire. The nest contained five eggs, and was placed in an oak tree, at a height of about nine yards from the ground, and corresponds in every particular to the description given by Hewitson. A good view of both birds was obtained, the female not exhibiting that extreme shyness spoken of by most authors. When first discovered she flew from tree to tree, uttering a note very much like that of the spotted flycatcher. She then settled on the nest, the observers remaining at a distance of about twenty yards. On being afterwards disturbed she flew away, and was not seen again. The nest and eggs are in possession of the discoverer, Mr. James Crossley, New Road Bottom, Hebden Bridge.—*H. W. Horsfall; Hebden Bridge, June 22, 1863.*

*Nests of the Common Wren and the Goldcrest.*—One of my boys found a goldcrest's nest a few weeks since high up in a larch. It was not, as is so often the case with this little bird's nest, suspended to the under side of a pendulous spray of the fir tree, but built upon (or supported by) a small branch near the point of its emergence from the trunk, and immediately beneath an old ring dove's nest. So close, indeed, was it to the latter that, though not in immediate contact, still there was scarcely more than room for the little architect to enter or depart from its neatly built nest-home. The same party of nest-hunters, a few days afterwards, asked me to go and see a nest they had found in a small plantation near the house,—a small, oval, moss-made nest, suspended nearly at the very end of a branch of a young Austrian pine, and at a height of about three feet from the ground. It was beautifully concealed, very compact, and much smaller than the wren's nest frequently is; but there could have been no doubt what it was, even if I had not seen one of the owners leave it. The suspension was a little out of the common rule, but what I have to add was more so. By some means the nest became dislodged, one or more of the eggs broken, and another or two ejected from the nest; the finder of the nest, who regarded it as a special object of interest, on discovering the mishap, replaced the sound eggs and refixed the nest as well as he

could in its original position; whereupon the little wren again took possession, and proceeded to incubate the remaining eggs. This continued for four or five days, when again, unhappily, the nest was by some means displaced, and both it and its contents hopelessly destroyed.—*J. C. Atkinson; Danby-in-Cleveland.*

*Does the Cuckoo partially Incubate?*—Has the cuckoo the power of partially incubating its own eggs before depositing them in the nests of other birds? The above query is promulgated from the following fact. On the 2nd of June I found a hedgesparrow's nest with two eggs. Happening to pass that way the next day I again looked into the nest, and found that it contained four eggs, viz., one cuckoo's and three hedgesparrow's. Upon blowing the eggs I was surprised to find the cuckoo's partly incubated; so much so that the eyes of the embryo were fully developed, while the eggs of the hedgesparrow were quite fresh. I am perfectly satisfied that the cuckoo's egg had been deposited in the nest within twenty-four hours of my blowing it. How, then, I ask, comes it partly incubated?—*Henry Reeks; Thruxton, June 9, 1863.*

[This fact, from such an observer as Mr. Reeks, is extremely valuable: it leads me, however, to offer a different hypothesis from that which my correspondent suggests. In the first place I imagine the cuckoo's egg to have been originally laid in some other nest, there partially incubated by the legitimate owner of that nest, and then removed by the parent cuckoo herself to the nest in which it was subsequently found. We possess reliable evidence, in the first place, that the female cuckoo maintains a kind of surveillance over her egg, and even over her young; and, in the second place, that she can convey her egg into a locality where it is impossible to introduce her entire body. Records, moreover, are not wanting of cuckoos having been shot with an egg actually in their mouth, so that the transfer of the egg from one nest to another after partial incubation seems not merely possible, but probable.—*Edward Newman*].

*Eggs of the Cuckoo: Nests of Water Rail, Hawfinch and Tree Creeper.*—On the 8th of June I had the nest of the wood warbler (*Sylvia sylvicola*) brought me. It contained four eggs of the wood warbler and one of the cuckoo. I never knew the cuckoo to choose this nest before. I have the eggs now in my cabinet. I have in two instances taken the egg of the cuckoo from the reed warbler's nest, once in 1847, and the other this present season. In both instances the nests were slung between three reeds, in a patch by the Thames side. I this year found the nest of the water rail with eggs; it was built amongst sedge, and composed of the dead leaves of the sedge; I thought it not so coarse a structure as that of the moorhen. I have also had three nests of the hawfinch this season with eggs; they are not so much a *rara avis* with us as with some. I rather like the nest, the stag's horn moss gives it a good appearance, quite different from any other that I am acquainted with. I get the eggs every season. I also had a very pretty nest of the tree creeper brought. It was built between the stem of an elm and a piece of loose bark, and very closely resembled the pretty vignette in Yarrell's 'British Birds,' vol. ii. It was composed externally of pieces of touch-wood, dried twigs, a few straws and a few roots, lined with feathers, chiefly those metallic glossy ones of the starling. It contained four eggs.—*C. Stubbs.*

*Irregular Appearance of the Swallow.*—I have been very much struck with the irregular appearance of the swallows this year. On the 10th of April four swallows were seen at Alne Cross; on the 18th two more at Youlton, a mile and a half from Alne; on the 21st five more were seen at Linton-on-Ouse; and on the 27th a flock was seen at Kirby Hall. Between these dates none were seen in the localities mentioned. The village has long been noted for the number of swallows breeding in it; yet it was the

5th of May before one was seen in the village itself. White, in his 'Natural History of Selborne,' has noted this irregular appearance and sudden withdrawal of the swallow, and tries to press it into the list of reasons for supposing swallows to remain here all winter, which I think a physical impossibility.—*J. Ranson; York.*

*Pallas' Sand Grouse at the Scilly Islands.*—A male specimen of this oriental grouse was picked up dead at St. Agnes, one of the islands of Scilly, on the 23rd inst., and it has been preserved by Mr. Vingoe, who ascertained that it was in a highly developed form, tending to show that, with the fact of my specimen having eggs in a very forward state, the chances are pretty much in favour of the calls of Nature resulting in the laying and hatching of eggs. The head of this male bird was plain stone-yellow, without any gular collar. My principal reason for writing is to enable you to record the Scilly islands as one of the localities of the settlement of this species in the United Kingdom.—*Edward Hearle Rodd; Penzance, June 27, 1863.*

*Pallas' Sand Grouse in Cornwall.*—I have examined a specimen of this remarkable bird in the flesh, which was shot a day or two since close by the Land's End, and sent for preservation to Mr. Vingoe, who at once submitted it to my inspection. I have taken care to examine the bird as to sex, food, &c., on dissection, and I find it is a female, with the ovary containing a bunch of eggs varying in size from rape seed to swan shot; the gizzard contained gravel and grass seeds, but no insects; the body was well furnished with puffy, soft flesh, without any fat, and the plumage appears rather worn on the edges; the first quills only show an attenuation toward the extremities, but the filamental feathers in the centre of the tail are extended about two inches beyond the tail, and appear ragged and worn. The general tone of its plumage is sienna-yellow, with the feathers on the back and scapularies bordered with dark brown; the belly-band well defined and dark brown; the under parts dull buff-yellow; the throat, chin and sides of the face sienna-yellow, separated under the eyes by an ash-coloured blotch. You will observe, on reference to Gray and Mitchell's 'Genera of Birds,' vol. iii., that there is a well-executed figure of this bird: the specimen now under notice is very like this figure, but instead of the throat having a band of deeper yellow, as represented by Mr. Mitchell, the bright yellow chin and throat of my bird is separated from the dull buff colour of the breast and under parts by a narrow well-defined black line running across the throat: I thought at first that this might be indicative of the male sex, but the result of my examination proves it to be of the other sex; but it may possibly be a character in the summer plumage of both male and female.—*Id.; June 15, 1863.*

*Pallas' Sand Grouse in Sussex.*—A splendid specimen of Pallas' sand grouse (*Syrrhaptes paradoxus*) is in my possession for preservation: it was shot on Friday last by Mr. Pickard, of Woodard's Farm, on the estate of Mr. J. A. Hankey, Balcombe. The feet appear very extraordinary, being rough and horny, without any division in the claws,—a provision of nature to counteract the great heat of the hot sands. What it subsists on in that clime does not appear: from the crop of this one I took a spoonful of small seeds, the name of which my agricultural friends cannot determine.—*Frederick Russell, in the 'Sussex Express' of June 13th, 1863.*

*Pallas' Sand Grouse in Sussex.*—A friend of mine has obtained in this neighbourhood a good specimen of what we believe to be the sand grouse. It is of a sandy colour, with black bars on the back, marked very similar to the female kestrel hawk, with pointed wings and rather long tail, which ends in a fine point; legs feathered to the toes, the bottom of the foot very rough; in good plumage. We believe it to be a



female bird. There were about seven or eight together.—*Charles S. Wille; Eastbourne.—'Field.'*

*Pallas' Sand Grouse in Sussex.*—A beautiful specimen of the above rare bird was killed at Box Hill, in this county, on the 29th of May last, by coming in contact with the telegraph wires, and was purchased by Mr. Albert Vidler, of Pevensey, who was returning from Hastings at the time. It appears that a covey of eight were seen in the road near Mr. Vidler's house, at Pevensey, the day before, by one of Mr. Vidler's men, named Edward Bunney, dusting themselves like partridges; but before Mr. Vidler could get out with his gun they had disappeared. They appeared to be travelling eastward. Box Hill being but a few miles from Pevensey, the chances are that it was one of the same flock. The man, being a good observer, had said that they were very different from partridges. On dissection the specimen proved to be a female: one of the long caudal feathers was wanting, supposed by coming in contact with the telegraph wires. The curious rat-like feet and toes were very peculiar. In the crop there was a little of that peculiar grass that grows by the salt water "palls," as they are called in this part.—*John Dutton; 51, Terminus Road, Eastbourne, June 15, 1863.*

*Pallas' Sand Grouse in Hampshire.*—I have recently had the pleasure of examining, in the flesh, and dissecting a beautiful example of Pallas' sand grouse. On the 26th of May my brother was told by the major of his regiment that he had disturbed a brace of sand grouse that morning while riding on the heath, at no great distance from the camp at Aldershot. My brother at once went to the spot where the birds had been seen: they were still there, but rose wild and out of shot. They were marked down, and this time my brother had a long shot and killed one of them: the other escaped. My brother at once despatched to me the bird he had killed. When I handled it I was struck by the fitness of its specific name of "paradoxus," for to look upon this little sand grouse is something of a puzzle. The beak and the horse-shoe markings on the breast remind one of a partridge; but the head and neck remind one of a dove; the wings are like a swift's, or perhaps more closely resemble those of a shearwater, but have a peculiarity of their own in the pinnated first primaries; the pinnated tail-feathers put one in mind of the mallard pintail; while the feet, with the exception of wanting a hind spur, resemble those of a grouse. The plumage (dissection proved the bird a female) is of an uniform isabelline colour, prettily barred with umber-brown; on either side of the head, and extending a little beyond the ear-coverts, is a patch of beautiful orange-yellow: the horse-shoe marking on the breast is of a very dark chestnut, almost black. The bird was extremely plump, and so fat that it was not easy to skin it. The crop was full to distention of the seeds of a species of grass which grows commonly on heaths; these, a few small pebbles, and one or two tops of grass-blades, were all I could discover. There were no traces of insect remains. I was much struck by the great depth of the keel of the sternum in proportion to the other bones of the bird; I did not measure it, but am confident that it must exceed an inch or even an inch and an eighth in depth. The shape of the wings, their very powerful muscles, and the depth of the sternum, would indicate that the bird is possessed of great powers of flight. My brother noticed the great rapidity with which the birds he saw flew. In the bird I dissected I found eggs larger than peas in the ovary. There seems no reason why this pretty species should not be naturalized in this country. From several notices which have recently appeared in the 'Times,' it is evident that a considerable flight of this little grouse has been driven by some cause or other to visit England. The birds appear to have no difficulty

in finding an abundance of congenial food on our heaths. Although smaller in appearance, I should say they would weigh nearly as much as a partridge, and their plumpness would render them a delicious bird for the table. I noticed that the flesh on the breast, like that of some of our most favourably known game birds, is of two colours, dark and white, the whitest flesh being closest to the bone. I take it that this is a very good sign of the bird's fitness to form a delicacy for the table. I may observe that there is an excellent figure of the bird, from the pencil of Mr. Wolf, in the second volume of the 'Ibis.'—*Murray A. Mathews; Weston-super-Mare, May 29, 1863.*

PS. Since writing about the specimen of Pallas' sand grouse which was shot at Aldershot, I have received another, also a hen bird, and also shot by my brother near the camp. On the occasion when this last bird was killed a covey of nine were seen. The birds were very wild, and only allowed one long shot to be obtained at them. Among the feathers of the first bird my brother sent me, and clinging to the skin, I noticed a very singular tick, of large size, the body of a leaden blue colour, with lighter veins; the legs and sucking apparatus of a bright lake colour. Another singular thing about Pallas' sand grouse I omitted to mention in my first communication is the under surface of the feet. This is covered with a rough serrated skin, which may well be described by comparing it to the surface of a large rasp: it is an admirable provision for enabling the bird to run with ease upon the hot desert sands. Mr. Bree, in his 'Birds of Europe,' vol. iii., does not mention this peculiarity of the under skin of the foot as pertaining to the genus *Pterocles*. I should be glad to know if it is confined to Pallas' bird alone of the different species of sand grouse. My brother writes to me that the birds he saw ran with great rapidity upon the ground, and that they skulked very low, seeming at a distance to be more like rats than birds.—*Id.; May 30, 1863.*

*Pallas' Sand Grouse near London.*—I killed last evening a very fine specimen of the Pallas' sand grouse in this neighbourhood. It was alone, and seemed tired, as I got within a few yards of it before it took wing. It runs like a golden plover, and resembles the grouse in getting up, uttering a plaintive note. It is in the hands of Mr. Argent for preserving.—*J. Withers; Forest Gate, Essex.*

[This example has but one elongated feather in the tail, and none in the wings.—*Edward Newman*].

*Pallas' Sand Grouse in Essex.*—Mr. Cater, the birdstuffer of this town, has just shown me three specimens, one male and two females, of *Syrhaptus paradoxus*, which were shot on the 29th ult., on our Essex coast, at Mersea. They appeared very tame, and allowed three hours to elapse while the gun was brought. The following is an extract from a letter from the slayer of them:—"I shot the three birds in a ploughed field on my farm, about a quarter of a mile from the sea shore. They seemed to come direct across the German Ocean. I only saw the three. They pitched down within thirty yards of myself and five men. They kept constantly running about, picking up insects. I directly sent for my gun. They let me get within forty yards, when I killed one with the first barrel and two with the second." They are in very good condition.—*C. R. Bree; Colchester.*—'Field.'

*Pallas' Sand Grouse in Essex.*—Two very fine specimens, male and female, of this bird were shot on the 7th inst. by a labourer, on a farm occupied by Mr. Nutton, about two miles from this town. They are now in the possession of Mr. Travis, naturalist, who informs me that the crops of these birds contained nothing but tares, and that the

flesh, both in appearance and flavour, was very like that of the common pigeon.—*Edward Taylor; Suffron Walden.—'Field.'*

*Pallas' Sand Grouse in Hertfordshire.*—Mr. Cooper, the well-known and able naturalist, of 28, Radnor Street, St. Luke's, has most obligingly placed in my hands, in the flesh, two specimens, which were killed only three days back, at a double shot, by Mr. John Read, at Dugdale Hill, South Mimms, near Barnet. Both the specimens were males; both were in the most perfect plumage, except that in one specimen one of the elongated tail-feathers had been shot away: they were excessively plump, without much appearance of fat, and their crops were stuffed to repletion with the seeds of the red clover and the common plantain; in their gizzards were the same two kinds of seeds in a semi-comminuted state and mixed with an abundance of small semi-transparent gravel-stones, scarcely larger than the seeds.—*Edward Newman.*

*Pallas' Sand Grouse in Suffolk.*—Four specimens of Pallas' sand grouse have been killed at Thorpe, near Aldborough: two killed on the 11th and one on the 12th were females: I have not ascertained the sex of the first procured, which is in the possession of Mr. Hele, of Aldborough. It appears by a local paper that two other specimens have been killed at Walberswick, near Southwold: they are now in the possession of J. N. Spalding, of Westleton, near Yoxford: sex not given.—*Edward Neave; Leiston, Suffolk, June 16, 1863.*

*Pallas' Sand Grouse in Suffolk.*—I have received four specimens of Pallas' sand grouse: the first two were males, and were killed at Horsey: yesterday morning a female was sent from Leiston, and another in the evening. They are singular and very pretty birds; the feet more like an animal's than a bird's, and very small. The person who sent me the first two called them a pair, but they are both males. The crops were quite full of small seeds.—*Thomas Dix; Ipswich, June 14, 1863.*

*Pallas' Sand Grouse in Suffolk.*—On Friday, the 28th of May, a covey of seven of these rare birds made their appearance at Thorpe. They were observed to come from seaboard to eastward, and apparently were compelled to alight on the first landing-place, the beach, through fatigue. A fine female specimen was shot and brought to me. I have since examined the body, and found many immature eggs in it. The crop was distended with the seeds of what appear to me to be either plantain or a Rumex. I have planted them, in the hope that they may germinate, and so perhaps throw light in regard to any locality they may have recently left.—*N. F. Hele; Aldborough, Suffolk.—'Field.'*

*Pallas' Sand Grouse in Norfolk.*—Another specimen of Pallas' sand grouse has been killed in this county, and been received by Mr. Ward, sen., of Vere Street, for preservation. This bird (a female, with large eggs in the ovarium) was shot on rising from a sand-hill a few miles from Yarmouth. In last week's 'Field' a writer wishes to know if the female possesses long centre tail-feathers similar to the male. I have the pleasure of informing him that the specimen I have above alluded to possessed (as is always the case with this species) long centre feathers in the tail. On measuring some foreign skins of this species, I find the length of the tail of the male to be 7½ inches, and that of the female 6 inches.—*'Field.'*

*Pallas' Sand Grouse in Norfolk.*—In concurrence with the various instances which have this season been recorded of the arrival of these distant foreigners in different parts of our island, I feel bound to inform you that I this morning (Saturday, June 12) received a fine pair, in the flesh, killed at Horsey, near Yarmouth, and that I have had precautions taken to preserve their bodies to be discussed at the forthcoming

dinner of the Acclimatisation Society, which is announced to take place on July 1st.—*Arthur W. Crichton ; Oxford and Cambridge Club, June 12.*—‘*Times.*’

*Pallas' Sand Grouse in Norfolk.*—I have just obtained a brace of sand grouse, shot this morning on this beach. They are male and female. The forked tail-feathers are found in both. The feet are not unlike those of a hedgehog. The birds are in the hands of Mr. Drewett, of Fakenham, to be stuffed, and can be seen there by any of your correspondents in this locality who may be desirous of doing so.—*M. Dodman ; Titchwell, Norfolk, June 10, 1863.*—‘*Field.*’

*Pallas' Sand Grouse in Norfolk.*—Since my last receipts as to the brace of Pallas' sand grouse that were procured on this coast, I obtained, on the day following my advice to you, two brace more, in fine condition and good plumage, but one brace too much shot to be preserved; the other brace has been forwarded to an eminent bird-preserver in Norwich.—*M. Dodman ; Titchwell, near Lynn, June 13, 1863.*—‘*Field.*’

*Pallas' Sand Grouse in Norfolk.*—The sand grouse have been found to have eggs in them. Can you or any of your correspondents inform me whether, if they hatched their young in this country, they would remain here, and whether, as natives of a warmer climate, they would be likely to survive our winter? A covey of sixteen was seen here on Sunday.—*W. Dodman ; Titchwell, Norfolk.*—‘*Field.*’

*Pallas' Sand Grouse in Norfolk.*—I have just seen three specimens of the beautiful little sand grouse (*Syrrhaptes paradoxus*), which were shot last week on the sands near this place. They are exquisite little birds, resembling the pigeon family about the head and neck, but decidedly grouse-like in the legs and feet. The latter are of the most diminutive proportions, and clothed with feathers to the extremities of the toes. I hear this morning that nine more have been seen on the beach, but were too wild to be got at.—*F. Tearle ; Hunstanton, June 30, 1863.*—‘*Field.*’

*Pallas' Sand Grouse in Norfolk.*—I have just received for preservation another of those inhospitably treated birds, the Pallas' sand grouse (*Syrrhaptes paradoxus*), killed in Norfolk. I found on examination this bird had laid all its eggs but two, and these were about the size of a hazel nut. This bird, I am told, was alone when killed, and no other could be found. I think it probable, therefore, that the cock bird may be amongst the many received by my father during this last week, killed in an adjoining locality. Having had the opportunity of dealing with several specimens, I am enabled to assert with confidence that this persecuted bird is possessed of considerable gastronomic virtues. This fact I think unfortunate, as I fear it may form a double incentive to their destruction. It must, however, be the wish of all, as there are several flocks known to exist here at present, that this foreign and remarkable visitor be spared, or at least during the present period of nidification.—*Edwin Ward ; 11, Thayer Street, Manchester Square.*—‘*Field.*’

*Pallas' Sand Grouse in Norfolk.*—Several specimens of sand grouse have been obtained on the coast of Norfolk, between Lynn and Yarmouth, within the last two or three weeks. To-day (June 13) I saw five birds in the shop of Mr. Sayer, bird-preserver, of Norwich. He says he has had no less than eleven specimens through his hands during the last few weeks. A gentleman who shot a brace of these birds told Mr. Sayer that there were no less than fifteen or twenty birds in the pack.—‘*Field.*’

*Pallas' Sand Grouse in Norfolk.*—Many more coveys of Pallas' sand grouse have visited this locality since my last note on the subject, and I have procured a very handsome male specimen. On Thursday, the 11th instant, a covey of fifteen passed



towards the south, along shore, and yesterday twenty were seen near Thorpe.—*N. Fenwick Hele; Aldeburgh, June 14, 1863.—'Field.'*

*Pallas' Sand Grouse in Norfolk.*—To your already long list of notices of the appearance of *Syrhaptes paradoxus* in various counties in England, I am now able to add the record of some twenty-six specimens having been obtained in Norfolk between the 4th and 11th of this month. I have only time this week to give you a brief notice of their occurrence, but hope by your next publication to forward more detailed particulars, having had the pleasure of inspecting fifteen birds, six males and nine females. On the 4th of June a flock of eight or nine was observed in a grass field at Wraxham, about fourteen miles from Yarmouth, and four were shot, three females and one male. On the 8th a male bird was killed on the Denes at Yarmouth, and two others were seen at the same time. On the following day (the 9th) a large flock of about forty was flushed once or twice on the beach at Horsey, near Yarmouth, returning each time to the same spot, a sort of hollow in the sands. From this number no less than fifteen were shot the next morning and evening (10th), and on the 11th two more, and five or six others were seen; and I have seen another pair from near Hunstanton, obtained on the 10th. In all cases these grouse have been found either on the sea-shore or in grass fields immediately in the vicinity of the coast. The birds are in fine condition, their crops filled with grass-seed, sand and minute pebbles; and the stomach, a true gizzard, is particularly hard and muscular. *H. Stevenson; Norwich.—'Field.'*

*Pallas' Sand Grouse in Nottinghamshire.*—On Tuesday, the 2nd of June, Mr. T. Jackson, Allamoor Farm, near Farnsfield, Notts, on crossing a clover seed field, noticed four peculiarly strange-looking birds. They allowed him to approach within forty yards of them, and having his gun with him he fired and killed a brace, male and female, and they answer exactly to the description given of them by Mr. E. J. Schollick in the 'Times.' They are in the hands of a naturalist for preservation. The weight of the male bird was eight ounces, and the female ten ounces. The eggs in the ovarium of the latter were about the size of small peas. They have been feeding on two or three varieties of grass seeds and the leaf of clover. The hen bird was mouthed by a dog, and her tail was minus the forked feathers.—*Southwell, Nottinghamshire.—'Field.'*

*Pallas' Sand Grouse in Lincolnshire.*—Some very rare and scarce birds have, unfortunately, been shot on this coast a few miles north of this place; I say "unfortunately" shot, for had they been left alone they might have multiplied. I see that mention is made of the sand grouse in the 'Field' of the 30th of May, and from that description they are of the same kind. They are now at a taxidermist's in this town, and I have compared them with Jardine's 'Ornithology,' and have no doubt they are Pallas' sand grouse.—*C. G. Holland; Boston.—'Field.'*

*Pallas' Sand Grouse in Lancashire.*—A covey (about fourteen) of that very rare bird, described by Sir William Jardine as Pallas' sand grouse, was seen yesterday in the Isle of Walney. My informant, who had just shot a beautiful brace,—a cock and a hen,—told me they were very tame, and allowed him to approach quite near to them while feeding in a field of corn, when they rose with a peculiar cry, but did not fly far. The bird is about the size of the golden plover, the cock much smaller than the hen; plumage of a brownish yellow colour, spotted and pencilled with black and dark brown. The tips of the wings are adorned with a dark-coloured long pointed feather, and the tail has two similar ones, giving the bird the appearance, when standing at a little distance, of having two long forked tails. The legs and feet are covered with thick

down; both are short, and the latter very curious, having soles of thick scaly armour. The toes are exceedingly short, making the footprint almost resemble that of a rat. The cock has a blaze of bright orange on each side of the head, a band of pencilled feathers across the crop, and a dark patch on the belly. This bird is said to be an inhabitant of Chinese Tartary. How came it in the Isle of Walney? If for the purpose of breeding surely it ought not to be disturbed. It is, of course, illegal to kill at this season, and I trust the people of Walney will protect and encourage this singular bird. They found a great loss in the expulsion of the sea gull from its breeding ground there. It is now returning, and probably will be protected. Let us hope that Pallas sand grouse may also find in the island a safe breeding ground.—*E. J. Schollick; Aldingham Hall, Ulverstone. — 'Times.'*

*Pallas' Sand Grouse in Yorkshire.*—At the end of last month a flock of sand grouse was seen on the moors near Sheffield, and four specimens were shot, two of which have been preserved.—*Charles Doncaster; Sheffield, June 24, 1863.*

[My correspondent adds a minute description, which leaves no doubt as to the species.—*Edward Newman*].

*African Sand Grouse in Yorkshire.*—I have seen a brace of those beautiful birds, the African sand grouse (*Pterocles setarius*), in fine plumage. They were male and female, and were shot the other day within a mile of the Sheffield Moors. A covey of twelve or fourteen were observed feeding in a grass field, and my neighbour, not having the slightest idea that they were grouse, shot a brace. They are a light cream colour and spotted, with pinnated tails about the size of a pigeon, with very remarkable feet, not unlike a rat's hind feet. Are they not rare visitants to these moors? and are the remaining ten or twelve birds likely to breed here? as they will be preserved if they remain in the same locality, now that they are known to be grouse.—*C. Rawson; Sheffield. — 'Field.'*

[The name is doubtless a mistake.—*Edward Newman*].

*Pallas' Sand Grouse in Yorkshire.*—A covey of nineteen of these grouse was found last week near Scarborough. On Tuesday, Mr. J. Wilson, of Hotmanby, shot two brace and a half out of the covey above named, a brace of which has been presented to the Mayor of Scarborough for his museum.—*'Times,' June 19, 1863.*

*Pallas' Sand Grouse in Yorkshire.*—Five specimens of this bird have been shot near Scarborough out of a covey of nineteen, and one about three miles from York out of a covey of four.—*Edward Wright; Fengate, York, June 22, 1863.*

*Pallas' Sand Grouse in Yorkshire.*—Two of these birds were shot out of a covey of fourteen, at Farsley, near Leeds, on Wednesday last. From the circumstance of some of the females having been found full of eggs, and in good condition, it is pretty evident that the migration has been for the purpose of breeding, and it is to be hoped that those under whose notice they may fall will prevent a ruthless slaughter, and endeavour to ascertain something more of the interesting visitors' habits.—*York Paper.*

[I must take exception to all the omitted portion of the long article from which the preceding paragraph is cut. The sand grouse found in the shores of the Mediterranean is of a distinct genus and species, *Pterocles alchata*; and those of Asia are probably also distinct; our lists have twenty species of *Pterocles* and two of *Syrhaptēs*. The observations in question will not apply to any genus or species; some of them refer to previously published accounts of *Pterocles*, others to *Syrhaptēs*.—*Edward Newman.*

*Pintailed Sand Grouse* (*Pterocles setarius*) in *Yorkshire*.—Mr. William Emmett, of Pudsey, shot on the 10th of June, out of a covey of fourteen, two specimens of the pintailed sand grouse, at Farsley. He has mounted them, and they are now in his possession.—*William Liversedge*; 35, *Stansfield Row, Burley, near Leeds*.

[Will Mr. Liversedge kindly examine these specimens, and state whether there is not a mistake in the name? if the toes are united and the hind toe absent they are *Syrrhaptes paradoxus*, like the others recorded in this number.—*Edward Newman*].

*Pallas' Sand Grouse in Durham*.—The flight of this Tartar stranger to our shores has been more extensive than Dr. Sclater and Mr. Moore anticipated. A flock of sixteen or seventeen Pallas' sand grouse has remained in the salt marshes near Tees-mouth for several weeks, and only quitted us last week. Three birds were shot on the 13th of May, by a working man in Messrs. Bell's foundry, at Port Clarence, who, unaware of their interest, gave them to a carpenter, to whose house an intelligent local naturalist fortunately directed me. A fortnight later the flock had not been further diminished, till another bird was shot by Mr. Walker of Hartlepool; and last week the covey, about thirteen in number, being put up on some high ground in the neighbourhood, took a distant westward flight. Possibly, if unmolested, they may yet remain to breed on some of our moorlands. They showed every disposition to settle here, but only owe their temporary security to their being taken by our gunners for golden plover, which, on the wing, they somewhat resemble. All the specimens obtained were males.—*H. B. Tristram*.—'Times.'

*Pallas' Sand Grouse in Northumberland*.—Three birds, answering in every particular to the very excellent description of Pallas' sand grouse given in the letter of Mr. E. J. Schollick to the 'Times,' were shot at Thropton, near Rothbury, in Northumberland, by a mason named George Rennison, a few days before Mr. Schollick's letter appeared. The birds, being entirely different in appearance from any known in this country, proved a complete puzzle to all who saw them. They were sent by Mr. W. Reay, of Thropton Cottage, to Mr. Hancock, of Newcastle-upon-Tyne, for preservation. I saw them as they passed through Morpeth, and a day or two after saw in the 'Times' the description of Pallas' sand grouse, given by Mr. Schollick, which agreed most exactly with the appearance of these birds. I understand Mr. Reay intends to present a pair of them to the Museum at Newcastle-on-Tyne.—*W. Wilkinson*; *Morpeth, June 6, 1863*.—'Field.'

*Pallas' Sand Grouse in Scotland*.—Another specimen of this remarkable bird has met its death on British soil, and narrowly escaped passing into oblivion unhonoured and unknown. Shot by some unknown person, the precise locality also as yet unknown, it was received on the 1st inst. from Perth, in a basket of leverets, rabbits and pigeons, forwarded to Mr. A. Ruthven, wholesale game dealer of this town, for sale in the ordinary way of business, without note or comment of any kind! By Mr. Ruthven it was kindly given to Mr. Thomas Littler, who presented it, still in the flesh, to this museum. It was a very fine adult male, and had apparently been dead a day or two. It has since been skinned and stuffed, and will be placed in company with the equally fine specimen from Tremadoc, also in the museum, and mentioned in Dr. Sclater's letter, published in the 'Times' of the 29th ult. Scottish naturalists can now, for the first time, add this species (*Syrrhaptes paradoxus*) to the list of birds killed north of the Tweed.—*Thomas J. Moore*; *Curator to the Derby Museum*.—'Liverpool Times.'

*Pallas' Sand Grouse in Scotland*.—A covey of ten or twelve Pallas' sand grouse

was discovered on the 8th inst. on the farm of Westerseat, near Wick. A single specimen, a male, was shot by a boy, who observed the grouse feeding among the young braird in a field of oats. They were subsequently seen on the neighbouring farm of Noss, but no more specimens have up to this time been procured. Their immunity in this respect is to be ascribed to the circumstance that those who first observed the birds supposed them to be either partridges or plovers, the former of which they somewhat resemble while on the ground, while their flight bears a close resemblance to that of the golden plover. The specimen referred to, which excited much interest among the curious in this quarter, has been preserved by Dr. Sinclair, and added to a very fine collection of Caithness birds possessed by that gentleman.—*H. Osborne, jun. ; Wick, Caithness, June 23, 1863.*—‘*Field.*’

*Pallas' Sand Grouse in Ireland.*—It will be interesting to your readers to know that the sand grouse, which have been seen in so many parts of Great Britain, have appeared on the north-west coast of Ireland. Walking in a rabbit warren by the sea-side one evening I came suddenly on a covey of thirteen or fourteen birds, which got up, and, making a circle of three or four hundred yards, flew almost over my head, and dropped on the sands close under the bent hills. They then allowed me to come within about thirty yards of them, and flew inland.—*W. Sinclair ; Drugoobe, Donegal.*—‘*Field.*’

PS. After writing on Tuesday last I formed a closer acquaintance with the covey of sand grouse which I mentioned in my letter of that day—one bird, a male, having been killed, and another, a female, wounded and made prisoner, on Wednesday. The captive seems quite contented, was curiously familiar from the first, feeds freely on grits, canary seed, groundsel, &c., and is fond of washing and splashing in a pan of water. The male bird had in his crop small seeds and tops of grass. They were both remarkably plump and sound on the breast. Before firing at them on Wednesday I had a good opportunity of observing them as they ran feeding along a road in the warren. In pace and action, more resembling pigeons than grouse, they fly something like plover, appear very strong on the wing, and carry a great deal of shot. The figure of Pallas' sand grouse in Sir W. Jardine's book, which a correspondent quotes, is good, but the colouring quite outrageous. I see many people exclaim against shooting these birds, or similar wanderers, under the idea that they might become naturalised in this country. I confess I do not agree with them, or think it at all likely that natives of lands in every way differing from ours should be likely to settle or flourish under circumstances so opposed to their previous habits. It appears to me much more advisable to make them available for scientific purposes, in cabinets of Natural History, where they will be seen by thousands. Very strange, indeed, is the impulse which has impelled the sand grouse to such an unprecedented flight, and a very curious and interesting subject (very little known, too), the general and partial migrations of the feathered tribes.—*W. Sinclair ; June 19, 1863.*

*Pallas' Sand Grouse in Ireland.*—A brace of sand grouse were shot on the coast at Nairn, near here lately. I obtained both specimens (male and female), and have preserved them.—*M. B. Cox ; The Glebes, Glenties, Co. Donegal.*

*Pallas' Sand Grouse in Hanover.*—In the ‘*Field*’ of May 30 I read an account of a covey of sand grouse having been seen in the Isle of Walney. It is a remarkable coincidence that during the last month a winged bird of the same species was picked up in this neighbourhood, having broken his wing by flying against a telegraph wire—probably a thing unknown in his native steppes. About a week ago a covey of eight



was also found not far from Hanover, and one was shot by a peasant. The winged bird was kept alive for some days, but has since died, and will be stuffed, but, I fear, not very skillfully.—*Field.*

*The Sandpiper a Diver.*—The sandpiper I alluded to (Zool. 8237) was *Actitis hypoleucos*. I came some time ago upon six or eight of them on the banks of the Ore, near here, and succeeded, by keeping under cover of some bushes, in approaching unseen near enough to watch their motions. They were running about, on the mud and gravel, and occasionally chasing one another. The water became a foot and a half or two feet deep a very short distance from the edge, and twice I saw a bird, when chased, rush into the deeper water. It might have been accident, or at least unintentional on its part, to go out of its depth, or it might be to avoid being deprived of a morsel of food. It was on one of these occasions that I saw the bird go down under the water and reappear, and immediately try to regain the shore as fast as it could. I think it is likely it had dropped a worm or piece of food, and tried to recover it: I cannot say whether it did so or not. The opportunity I had of observing their motions while swimming under water was while in a boat endeavouring to capture a wounded bird. Owing to a rifle-range being erected on the banks of the Leven at Cameron Bridge, most of the birds have deserted the immediate vicinity, and I have not seen a sandpiper for about a year. If any one has leisure to do so, and is where sandpipers are common, he might by watching ascertain more fully if diving is so very unusual amongst them. I remarked above that most of the birds had deserted the vicinity of the range: it is curious that one of our shyest birds still remains. A pair of kingfishers, which for some years have frequented an old quarry-pond near the river, and within fifty yards of one of the ranges, are again breeding there this summer; and only a few days ago, while I and a few others were firing, the birds were coming and going about the place, seemingly not much alarmed. The kingfisher is a rare bird with us.—*Robert H. Leven; Kenaway, Burns, Windygaates, May 29, 1863.*

*Five Eggs in the Nest of a Common Snipe.*—On a large marshy piece of ground, where snipe are now breeding in some abundance, I have discovered one nest containing the unusual number of five eggs. No other has since been added, and although one bird only performs the task of incubation, I still incline to Mr. Hewitson's belief that the number of eggs laid by this species never exceeds four. In the present instance four of the eggs are very much alike, but the fifth, although it closely resembles them in form, differs considerably in colour.—*Henry L. Saxby; Baltasound, Shetland, June 10, 1863.*

*Occurrence of Spoonbills on the Suffolk Coast.*—On the 1st of May two spoonbills were killed at one shot, by Mr. M. Johnson, of Bevarre Hall, between Lowestoft and Southwold, on the sea-coast. These birds, which were sent to a Norwich birdstuffer to be preserved, were in full adult plumage, and might naturally have been taken for male and female, one having a longer and fuller crest, and the buffy tints on the fore part of the neck and crest somewhat brighter. On dissection, however, I found them both females, each bird having a fine cluster of eggs, the largest about the size of small hemp-seeds; but these occurred in the specimen with the long crest, &c., and which I presume was the older bird of the two. The stomachs, with the exception of one or two small pebbles, were perfectly empty, as if the birds had been killed immediately after a long flight; they were, however, in fine condition, being very fat, both internally and externally.—*H. Stevenson; Norwich, May 24, 1863.*

*The Numidian Crane in Orkney.*—A rare and beautiful bird, which, from all that we can learn, has never before been found in a wild state in the British Isles, has been secured by an enthusiastic ornithologist in Orkney, to whom we are indebted for the following brief notice, which will be read with interest by naturalists:—"A fine male bird, in beautiful plumage, the demoiselle or Numidian crane (*Anthropoides Virgo*), was shot on Thursday last, the 14th of May, 1863, at Deerness, east mainland, Orkney, and has since been preserved for Mr. Reid, bookseller, of Kirkwall. Two of the birds were seen at Deerness for some days, and were pursued and shot at several times. When the one was killed, the other flew over to the neighbouring island of Copinshay, and was not afterwards seen by the Deerness folks, who describe the flight and walking of this remarkable bird as something very graceful, and such as they had never witnessed before. Although these birds (which are natives of Africa) feed on aquatic animals, small fish, frogs, &c., in their native haunts, nothing was found in the stomach of this one but oats, several grains of which were also found adherent on its tongue. It was not starved-like, weighing about five pounds, being considerably heavier than our herons. The gulls and lapwings continually attacked the two strangers whenever they walked or winged their way over the grass and oat fields, and they were heard frequently to utter a hoarse scream when thus persecuted by their tormentors. The demoiselle is quite new to Orkney, and is a valuable addition to our large list of birds. As far as I can find in any work on British birds, it is new to Britain in a wild state. It has been imported, however, and may be seen in a domestic state in the Garden of the Zoological Society." Since the above was written, we learn that a day or two after the first had been shot the other demoiselle returned to Deerness from Copinshay, and was again seen in the fields, most probably in search of its mate. Several parties endeavoured to stalk it, but without success. It is described by some of the country folk who have watched it as a very large bird, "looking nearly as big as a sheep," which of course must be taken with a considerable limitation, as the birds are both most likely about the same size. We believe the extreme height of the specimen in Mr. Reid's possession is about three feet, and the spread of the wings about five feet, but the exact measurement has not been given.—*John o'Groat's Journal*.

*The Little Gull and Sabine's Gull at Weston-super-Mare.*—On a late visit to the house of Mr. Stone, the birdstuffer, of this place, I saw a specimen of that pretty little forktailed gull which constitutes so good a link between the terns and the gulls, and which is known by the name of Sabine's xeme, or Sabine's gull. It is in the plumage of the first year, which not a little resembles that of a tarrock or young kittiwake. The specimen of the little gull is also in immature plumage. Both these birds were killed on the Weston sands a year or two since.—*Murray A. Mathews; Weston-super-Mare, May 29, 1863.*

*The Arctic Skua feeding on Worms near Newry.*—On the 6th of this month (June) an adult bird of the species *Lestris parasiticus* of Jenyns, Gould, &c. (the arctic skua of authors), was shot, while picking up worms when following a plough at work, in the parish of Jonesborough, about five miles from Newry, and about three miles from the nearest part of the sea-coast. It was alone, and had been observed flying high, coming from the coast. The plumage is very perfect, and the colours bright. These skuas have generally appeared in these countries much later in the year. The occupation of the skua, when shot at, was not in accordance with its specific name; however, we are not bound to believe that it does not sometimes procure its food in a peaceable way.—*Clermont; Ravensdale Park, Newry, June 13, 1863.*

*The Land Tortoise breeding in Cornwall.*—As the fact of the land tortoise having bred in Cornwall, in the instance you have been good enough to record (Zool. 8333), at the residence of Mr. W. Williams, of Tregulrow, appears to have afforded some interest, I feel gratified at being able to furnish you with some additional information bearing upon the same subject, which has been afforded me by the widow of my friend, your lamented correspondent, the late Mr. R. Q. Couch. I do so with greater readiness because in all probability he would have himself communicated the circumstance, and still more likely would have added many particulars which he might have observed respecting the anatomical structure of the ovarium of this reptile. I cannot do better than allow you to publish Mrs. Couch's own words in reference to her own tortoise:—"I have been reading in the 'Cornwall Gazette' an account of the tortoises bred at Tregulrow; and this has reminded me of a circumstance that it was my intention to have communicated to you before, but owing to my dear husband's illness and death had quite escaped me. A tortoise in our possession did not this spring make its appearance, and we at last conjectured what turned out to be true, that it must have been buried (too deep for extricating itself), by the workmen employed on these premises, underneath rubbish, &c. On the 29th of April our gardener, on turning up some ground, turned up the tortoise, which was quite dead; and his tool striking the shell it fell in pieces; but there were four eggs in it, which I have now quite perfect. My husband thought the Natural History Society might be glad to have them. I have not sent the eggs to you now, fearful of any accident, but I suppose they are valuable."—*Edward Hearle Rodd; Penzance, June 12, 1863.*

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*Fish Ova not eaten by the Water Ouzel.*—I was glad to see in an article in the 'Zoologist' (Zool. 8631), the water ouzel alluded to as not feeding on or destroying the ova of fish. I have been a close watcher of this bird for many years, during which time I have resided in Shropshire, Herefordshire and Radnorshire, and was constantly shooting and fishing on the rivers near where I was living, and where the water ouzel was a common bird. I never would allow my keeper to kill one or take its nest, though he had frequent opportunities of doing so. I have often when fishing closely watched the bird feeding, by being concealed from its sight, and never found an instance of that food being the ova of fish which it had brought out of the water and was eating on the gravelly shore by the side of the river, nor have I ever discovered any fish ova in those that I have examined. A friend of mine, a good naturalist, when fishing one day in the month of April, in which month the grayling are spawning, watched a water ouzel on one of the spawning beds. It was constantly flying backwards and forwards and pecking at something in the gravel, when he naturally concluded that it must be eating the ova of the grayling. He happened to have a gun with him, and shot the bird, which he took home and examined, and found in the stomach nothing but the larvæ of aquatic insects. No doubt this is the reason why the water ouzel is so much destroyed by the keepers on the rivers. Often when fishing, and the sport has been dull, while sitting on the banks of the river, admiring the beautiful wild scenery around me, have I listened with much pleasure to the pretty note of the water ouzel, which is much like that of the thrush.—*J. W. Clutterbuck; 9, Queen's Gate Gardens, June 25, 1863.*

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*Physa fontinalis* in Brackish Water.—During a short tour in Lincolnshire last season, I met with this species abundantly in decidedly brackish water. It occurred near Burton Stather, on the banks of the river Trent, in a dyke at one time closed by a natural embankment, but at the time of my visit open at one end to the river, which obtained free ingress at high water (the tide flows as far as Gainsborough). The bed of the dyke being lower than the mouth, there appeared to be always a sufficient supply of water to sustain life. The specimens collected at the time were quite as large as the typical form, but the animal much darker, and in some specimens quite black. No other molluscan form was visible, although it was quite evident—from the fact of a large number of larva-cases of *Limnephilus pellucidus*, of which there was an abundant supply, being composed of fine examples of *Pisidium nitidum*, *Bythinia Leachii*, *Valvata cristata*, *Planorbis carinatus*, *P. glaber*, and *Limnea pereger*—that many species had existed, within a very recent date, in the same water-course; and that life had been suddenly extinguished, probably at the first influx of salt water, was manifest from the non-appearance of those peculiar aberrant forms which characterize the results of gradual change. How are we to account for the *Physa*, a mollusk possessing very delicate habits, surviving the inroad of the salt water, whilst the other species had succumbed to its overpowering influence? — *George H. Parke; Halifax, June 6, 1863.*

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*Capture of Deilephila livornica in a Boat.*—On Thursday, the 18th of June, as I was returning in a boat from a visit to Mr. Edgecombe, my attention was called to a fine specimen of *D. livornica* pinned at the back of the boat. The boatman told me he had found it in his boat that day when he returned from dinner, and had pinned it there at once. The insect was alive, and in beautiful preservation, and now forms one of the gems of my cabinet.—*G. C. Green; Modbury Vicarage, Devon, June 24, 1863.*

*Occurrence of Clostera anachoreta at Folkestone.*—I met with a single larva of *Clostera anachoreta* on a poplar tree at Folkestone, very near the place pointed out to me some time ago by my friend Dr. Knaggs as the spot where he re-discovered the long-lost species. The larva was nearly full-grown.—*Joseph Sidebotham; Manchester, June 26, 1863.*

*Description of the Larva of Ino Geryon.*—The eggs, which are of a pale yellow colour, are laid at the beginning of July in confinement, and are scattered at intervals in the box or cage in which the imago has been kept: the young larvæ emerge in a few days; the full-fed larvæ were found in April by the Rev. E. Horton, to whom I am indebted for a supply: they were feeding on *Helianthemum vulgare* (sun cistus) on the Malvern Hills; and the fact of their feeding in July, and again in April, leads to the conclusion that they hibernate, although this has not been established by actual observation. Unable to supply my larvæ with their proper food-plant, I gave them *Rumex acetosella* (sorrel), on which they fed freely and arrived at maturity; but Mr. Horton informs me that although he offered them the sorrel they would not touch it while the supply of *Cistus* lasted. The full-fed larva, when disturbed, falls off its food plant, and lies on its side in a crescentic form, the two extremities approaching but not touching. Head very small, entirely retractile within the 2nd segment; body obese, almost onisciform, gradually decreasing in size towards



both extremities; the incisions between the segments are well marked, the segments being distinctly divided; on each segment are six warts, neither of them conspicuous, but each emitting a thin fascicle of short radiating bristles, among which are interspersed a few longer silky hairs: every part of the dorsal surface, the warts alone excepted, is covered with minute papilliform black dots. Head black, shining: 2nd segment dingy yellow in front, black and rather shining on the disk, purplish flesh-coloured beneath; median line of the back dingy white, narrowly bordered with very dark reddish purple; exterior to these narrow borders is a broad dingy yellow stripe on each side, swelling on each segment into a rounded lobe; the sinuous exterior margin of the yellow stripes is bordered with black, which is gradually shaded off into reddish purple in the spiracular region; belly and claspers dingy flesh-colour: legs black. The larvæ were full-fed early in May, and spun a thin white silken cocoon among the leaves of the food-plant, in which they turned to pupæ. Pupa brown, smooth, obese, the anterior extremity acute, the posterior remarkably obtuse: the dorsal surface incised at the segments as in the larva, and the posterior margin of each projecting over the anterior margin of the next; the wing-cases ample and clearly defined; the leg-cases extending to the extremity of the abdomen; the colour brown, with longitudinal series of darker dots, those in the middle approximate, the others more distant. The imago appeared at the end of May and beginning of June, sixteen days elapsing between the first and last.—*Edward Newman*.

*Description of the Larva of Orgyia cænosa.*—The females, which are very sluggish, lay their eggs on the stems or blades of *Cladium Mariscus* or *Arundo Phragmites*, in a single row, sometimes more than twenty together: they hatch in about fourteen days, and the young larva hibernates when very small; no date can be given with any precision, since the egg, newly-hatched larva, full-grown larva, pupa and imago have often been found on the same day during the summer. The full-grown larva rests in a nearly straight position on the stems or leaves of its food-plant: head prone, quite as wide as the body and hairy, the hairs directed forwards: body of nearly uniform substance throughout; 2nd segment emitting two long slender fascicles of hair, directed forwards and projecting over the head, and slightly divaricating; the 5th, 6th, 7th and 8th segments have severally a dense median dorsal brush of stiff erect hairs; the 10th and 11th segments have each a median ovate dorsal valvular opening; the 12th segment emits a single fascicle of long hair which is directed backwards, and the 13th segment has a great number of long hairs directed backwards; the 3rd, 4th, 9th, 10th, 11th and 12th segments have each eight wart-like protuberances, each of which emits a fascicle of radiating hairs; the 5th, 6th, 7th and 8th segments have each three such wart-like protuberances and fascicles on each side. Head pale reddish brown, with white labrum, and a black blotch on each side of it, bordering the mouth: the long fascicles on the 2nd and 12th segments are black; those composing the dorsal brushes, as well as those on the sides, golden yellow; hairs on the head black; those on the 13th segment are for the most part black, some few being yellow; ground colour of a median dorsal stripe intense velvety black; sides paler, somewhat smoke-coloured: a pale yellow stripe, interrupted at each wart of the third lateral series, on the 6th, 7th, 8th, 9th, 10th, 11th and 12th segments; all the warts, as well as the legs and claspers, are pale obscure wainscot-brown. Arrived at maturity the larva spins a long, yellow and rather shuttle-shaped cocoon, in which are interspersed a great number of its hairs; this cocoon is slightly open at the upper end, and is also fastened longitudinally on the stem or leaf of its food-plant. The imago emerges

in about a fortnight, the male flying with activity, the female rarely leaving the place where it emerges; it never flies to any considerable distance. I am indebted to Mr. Brown, of Cambridge, for this larva, and for a knowledge of the economy of the species.—*Edward Newman.*

*Description of the Larva of Orgyia gonostigma.*—We know but little of the economy of this insect in a state of nature, and therefore I can only record its habits in confinement. The female lays her eggs in June, on a web which formed the covering of the pupa, without any regularity, and sometimes even piled on each other; and they are not always confined to the web, but sometimes scattered over other parts of the breeding-cage; the young larvæ emerge from the egg in about three weeks, and change their skin several times without appearing to increase much in size: they hibernate early in October, spinning a slight web, and secreting themselves under the leaves on which they have been feeding: from this retirement they emerge about the middle of March, long before there is any appearance of the oak-buds bursting; but if supplied with the opening buds of the whitethorn they will feed on them until the oak-leaves have made their appearance; they feed chiefly on *Quercus Robur* (oak), always preferring stunted bushes, and not frequenting grown trees; but also on *Cratægus oxyacantha* (whitethorn), *Betula alba* (birch), and *Salix Caprea* (sallow): they continue to feed until the end of May. When full-fed, which is usually early in June, the larva rests in nearly a straight posture on its food-plant. Head prone, nearly of the same width as the body; body of nearly uniform substance throughout; 2nd segment emitting two long tufted fascicles of hairs, which project over the head, and have exactly the appearance of the pedunculated eyes of snails; the 5th, 6th, 7th and 8th segments severally bear a dense dorsal transverse brush, composed of erect stiff hairs; the 12th segment bears a single fascicle of long hairs directed backwards at an angle of 45 degrees, and the 13th segment emits a great number of hairs of different lengths directed backwards; the 3rd, 4th, 9th, 10th, 11th and 12th segments have severally two transversely placed dorsal warts, emitting a fascicle of radiating hairs of two kinds, the outer and longer ones being simple bristles, the inner and shorter ones beautifully plumose or clothed with minute hairs; in addition to these ornaments each segment has on each side three warts, each bearing a radiating fascicle of stiff bristles. Head black and glabrous; the fascicles of the 2nd and 12th segments black, the four dorsal brushes brown; the plumose dorsal fascicles whitish tinged with a golden lustre; the lateral fascicles dingy brown; ground colour of the body intense velvety black, with four rows of somewhat amorphous bright orange spots; the upper row on each side alternate with the dorsal series of fasciculated warts; the lower row on each side form an interrupted stripe, which passes through the middle lateral series of warts; the protuberances which emit the long anterior fascicles are decorated with a large bright orange spot. The larva spins a slight web, thickly interspersed with its hairs, the colour of the whole being dingy ochreous; in this it changes to a shining pupa, intensely black, but having three pale abdominal rings, and also a rather dense dorsal clothing of pale delicate hairs, commencing on the head and continuing down the back to the caudal extremity, which is very pointed and furnished with minute hooks, by which it is attached to the interior of its web. The chrysalis state lasts for a fortnight or three weeks; in the present year the males were on the wing by the middle of June, but the time of emerging usually lasts for three weeks, viz., from the 16th of June to the 3rd or 4th of July. I am indebted to Mr. Blackmore for the opportunity of describing this beautiful larva.—*Id.*

sounds, but some twenty years after Lieutenant White, of the United States Navy, published his Voyage in the Chinese Seas, and, in relating the sounds that astonished himself and his crew at the mouth of the Cambodia River, he informed us that the interpreter told him they were produced by a troop of fishes that had the faculty of attaching themselves to bodies by the mouth. The noises were heard around the bottom of the vessel. "It was," he says, "like the mixture of the bass of an organ, the guttural cry of a frog, the sound of bells, and the tones which imagination might attribute to an enormous harp; one might have said that the vessel trembled with it. These voices increased, and finally formed a universal chorus over the entire length of the vessel and two sides. In proportion as they went up the river the sounds diminished, and finally ceased altogether." In a recent communication to the British Association for the Advancement of Science it is observed that "every mariner who has anchored early in the spring on the coasts of Carolina, Georgia and Florida, must have been annoyed by the drumming noise produced in the night, apparently at the bottom of the ship, and loud enough to deprive the stranger of rest until habit has rendered the sound familiar." Neither of these accounts seem distinctly to assign the noise to the Sciaenæ, but our fishermen are familiar with them. The sounds vary in their tones in different species of grunts and drummers. The fishermen know that by imitating them they can attract them to their nets, and they practise the imitation of their sounds successfully as a lure.—*Hon. Richard Hill, in 'Intellectual Observer' for April, 1863.*

## TO CORRESPONDENTS.

I have again found it impossible to complete the publication of arrears, but I hope to accomplish this in the September number: if unable to do so I must have recourse to a Double Number in October. There has been no great influx of contributions during July, but having received many larvæ for description I am very desirous that the donors may see that their kindness has been availed of.

**PALLAS' SAND GROUSE.**—It will be seen by several notices in the present number that this Asiatic bird has appeared in many parts of the United Kingdom during the months of May and June. I am very desirous that the '*Zoologist*' should contain as complete a record as possible of so remarkable an event, and I trust that every one of my ornithological readers will exert himself to collect authentic information, and transmit it to me during the first week in August. The points of especial interest are these: In what direction the birds came; the locality and date of observation; an approximation to the number seen; the food, sex and condition of the specimens obtained. When I have sufficient materials I purpose compiling a brief account of this unprecedented visit.—*Edward Newman.*

**LARVÆ OF LEPIDOPTERA WANTED TO DESCRIBE.**—Several gentlemen having kindly written to inquire what larvæ I desire for the purpose of making descriptions, the following will be particularly acceptable. *Geometræ*.—*Apiciaria*, *maculata*, *margaritata*, *fasciaria*, *syringaria*, *tiliaria*, *fuscantaria*, *angularia*, *hispidaria*, *viduaria*, *glabraria*, *repandata*, *rhomboidaria* (not the London variety called *perfumaria*, which I have), *abietaria*, *cinctaria*, *roboraria*, *consortaria*, *extersaria*, *punctulata*, *obscurata*, *obsfusa*, *trepidaria*, *cytisaria*, *smaragdaria*, *viridata*, *vernaria*, *bajularia*, *thymiaria*. *Pseudo-bombyces*.—*Lacertula*, *sicula*, *hamula*, *unguicula*, *bicuspis*, *furcula*, *bifida*, *assinea*, *cucullina*, *trepida*, *chaonia*. *Noctuæ*.—*Batis*, *duplaris*, *fluctuosa*, *diluta*, *Or*, *secularis*, *ridens*, *glandifera*, *perla*, *Aceris*, *megacephala*, *strigosa*, *auricoma*, *Menyanthidis*, *Myricæ*, *venosa*. A number of descriptions unavoidably crowded out will appear in the August number.—*Edward Newman.*

**PS.** Since the preceding paragraphs were in type I have received an admirable summary of the dates and localities of the occurrence of *Syrhaptus paradoxus* in Norfolk and Suffolk from the pen of that eminent ornithologist, Mr. Stevenson, of Norwich. Also several minor but interesting communications.—*Edward Newman.*

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